EIIP EDI IMPLEMENTATION GUIDELINE (FOR AIR EMISSION MODELING)

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SECTION 1 — INTRODUCTION

1.1 Purpose of Guideline

This implementation guideline is provided by the U.S. Environmental Protection Agency (herein referred to as USEPA) Emission Inventory Improvement Program (EIIP). This guideline specifically supports the Phase I goals of the EIIP Electronic Data Interchange (EDI) project.

This phase of the EIIP EDI project is a prototype. It is not a pilot or a production EDI system. A prototype system differs from a pilot and production system in a number of ways. A pilot is geared toward immediate evolution into a production environment. A production system fully supports the routine exchange of business information between trading partners. The prototype is a proof-of-concept step that is initiated to demonstrate the basic performance of the EDI and supporting systems. The prototype does not take into account many of the issues that must be addressed for a pilot and/or production system. This guideline includes information that is directly applicable to a pilot environment. Although the document is intended to support the initial, prototype effort, an understanding of the more developed, pilot-oriented information is important for future activities.

This Implementation Guideline provides trading partners with an outline for the implementation of EDI for the submission of air emission modeling information to the USEPA Emission Factor and Inventory Group. It also provides the information necessary to understand the general EDI goals of the EIIP and USEPA, provide an overview of the EIIP EDI project, and communicate the general information needed for the prototype.

1.2 Scope and Applicability

As this phase of the EIIP EDI project is a prototype and does not address all the components/issues of a pilot or production system, actual implementation is somewhat simplified. However, for the prototype to be effective, it must highlight those areas that will be required for future expansion of the project.

The scope and applicability of the Implementation Guideline encompass all aspects of implementing an EDI system that supports the reporting of air emission modeling information as defined by the EIIP initiative. Specific reference is made where the prototype implementation diverges from typical pilot/production system requirements.

In order to provide a comprehensive reference document, including EDI implementation requirements of the USEPA, the EIIP guideline is written to include information specified in the USEPA EDI Implementation Guideline. Although this implementation guideline contains guidance regarding the USEPA's implementation of EDI, more information about the USEPA EDI perspective or other EDI projects within the USEPA may be found in the USEPA EDI Implementation Guideline dated September 23, 1994.

1.2.1 Project Overview

The Clean Air Act Amendments (CAAA) require that many State and Local agencies collect emission inventory data as a basis for planning and demonstrating attainment with National Ambient Air Quality Standards (NAAQS). Emission inventories are a basic component to air quality modeling and other air pollution management analyses which are used to demonstrate that proposed air pollution control strategies are sufficient to attain the State and Federal air quality standards. The availability of emissions data is of primary importance to support urban and regional air quality attainment demonstration, emission control strategy development, emissions trading, regulatory and economic impact analyses, geographic and satellite information systems, and scientific research. These data are essential to the infrastructure in managing environmental air pollution at the Local, State, Regional and Federal levels.

The Emission Inventory Improvement Program was formed as a joint effort of State and Local air agencies and USEPA for the purpose of improving the quality of the emissions data collected, and the way the data is transferred and shared among users. The EIIP Data Management Committee (DMC) is responsible for developing and implementing a common data transfer format, and for facilitating data sharing within the emission inventory/modeling community.

The USEPA published its *Policy on Electronic Reporting* (FRL-3815-4, vol. 55, no. 146, July 30, 1990), endorsing an approach commonly known as EDI for electronic reporting of environmental data. This policy was consistent with the anticipated government-wide mandate for EDI, published as FIPS PUB 161 (September, 1991). USEPA's *Policy on Electronic Reporting* was intended to promote electronic reporting, and a uniform USEPA approach that is compatible with current industry and Federal sector practices. The policy recommends a standards-based approach, and encourages the use of American National Standards Institute (ANSI) Accredited Standards Committee (ASC) X12 standards for EDI. The DMC has adopted this approach to develop the EIIP common data transfer format for the emission inventory/modeling community.

1.2.2 EDI Objectives and Approach for EIIP

An objective of the EIIP is to implement EDI for the submission of air emission inventory and modeling information. This initiative is intended to allow data to be directly transmitted and shared between the different computer systems of trading partners. The EIIP EDI initiative is designed to allow the reporting of air emission inventory and modeling data from the following emission source areas:

- Point Source
- Area Source
- Nonroad Engines and Vehicles Source
- Mobile Source
- Biogenic Source

For this phase of the project, the implementation guideline incorporates a level of detail that is appropriate for use with all five areas. Within each of the areas, several specific reporting functions (e.g., State Inventory Plan (SIP) inventories, Annual Point Source inventories, etc.) may be identified. As each function may have different ans some overlapping information, each one must have a separate, report-specific guideline. Each individual guideline will explain the use of EDI with respect to specific practices and assist in clarifying the use of the transaction set between trading partners. For Phase I of the EIIP EDI prototype project, air emission modeling data (as defined by the Environmental Council of States (ECOS)) is the intended reporting function. This implementation guideline is written to provide the details for reporting this information via EDI.

When realized, the EIIP EDI objectives will provide economies in exchanging information with internal and external partners. The EIIP has developed an approach to EDI that will benefit all participants (trading partners), including the regulated community, Federal and State environmental program offices, and other related organizations. This approach includes:

- Implement EDI using the American National Standards Institute (ANSI) Accredited Standards Committee (ASC) X12 standards;

- Apply the ANSI/ASC X12 841 Specifications/Technical Information transaction set and developing the corresponding EIIP-specific convention document;
- Develop national standards for the implementation of emission inventory and modeling reporting;
- Avoid the development and proliferation of proprietary software, standards, procedures, and conventions;
- Reduce the volume and necessity of paper reporting;
- Increase the speed of reporting and analysis of the data;
- Enhance the level and effectiveness of quality control associated with reported data;
- Facilitate data sharing among partners; and
- Seek voluntary collaboration with the regulated community, Federal and State agencies, educational institutions, and support contractors.

Electronic Reporting

The U.S. Government Policy on EDI, as published in the Federal Information Processing Standards (FIPS PUB 161) became effective on September 30, 1991. Its objectives are to:

- Have Federal Agencies achieve the benefits of EDI (e.g., reduced paperwork, fewer transcription errors, faster response time for procurement and customer needs, reduced inventory requirements, more timely payment of vendors);
- Ease the electronic exchange of data by the use of standards for data formats and transmission envelopes; and
- Minimize the cost of EDI implementation by preventing duplication of effort.

Prior to implementing an EDI project, FIPS PUB 161 should be reviewed in detail. Listed below are some of the highlights.

The transmission of reports using EDI is consistent with the USEPA's electronic reporting (ER) policy. Notice of USEPA policy was published in the Federal Register, Notice No. FRL-3815-4, Volume 55, Number 146, July 30, 1990 and was entitled "USEPA's Policy on Electronic Reporting." This policy establishes a uniform USEPA approach to electronic reporting. In addition, this policy is intended to promote the adoption of electronic reporting by USEPA Program Offices and to ensure that as they implement this technology, they do so in a manner that is both consistent across the USEPA and compatible with the current electronic reporting practices in industry.

The USEPA also published guidance related specifically to the use of EDI. The notice of the USEPA's policy on employment of EDI was published in the September 4, 1996 Federal Register, Volume 61, Number 172, FRL-5601-4. The notice is entitled "Notice of Agency's General Policy for Accepting Filing of Environmental Reports via Electronic Data Interchange (EDI)". The notice provides an overview of the USEPA perspective for the use of EDI, the history of EDI within the USEPA, and how to use EDI for reporting to the USEPA.

1.3 Responsible Entity

EDI is a partnership that involves several individuals or functional groups within each organization. EDI is a new way for the government to conduct environmental reporting. For EDI to be successful, all who are involved must work together in an open and informed environment. With every EDI system that is implemented, including the EIIP EDI project, each organization must secure and maintain staff that fulfill the following positions/responsibilities:

The **Trading Partner** (e.g., a governmental agency, an emission source, a municipality, a corporate entity, etc.) is responsible for its EDI software and successfully communicating data to its collaborating trading partner. Communicating data includes acquiring the data, presenting it to a translator for conversion to the X12 Standard and transmitting it via a prescribed route. Each trading partner is also responsible for acquiring required software and hardware and for problem resolution with its associated trading partners.

As each trading partner is responsible for its own part of the overall EDI system, business and technical decisions must be based on the resources and needs of that organization. Each trading partner will develop their EDI system to fit their

organization. Once developed, communication and cooperation will be necessary to form the essential relationships between trading partners.

In an EDI system environment, trading partners function in pairs. Although an individual organization may interact with numerous trading partners, it shares a unique, one-to-one relationship with each. Because each relationship has unique characteristics, each pair of trading partners must communicate EDI-related decisions in order to be successful.

In the case of the EIIP EDI project, the EPA is responsible for providing the necessary Implementation Guidelines and testing assistance during the initial implementation to ensure successful delivery of the data.

The participants in the EIIP EDI prototype project consist of the following entities:

- USEPA Office of Air Quality Planning and Standards (OAQPS) Emission Factor and Inventory Group (EFIG) Emission Monitoring and Analysis Division (EMAD); and

- State/local environmental agencies responsible for air emission modeling data. The specific state trading partners involved in the EIIP prototype implementation are California Air Resources Board (CARB) and Pennsylvania Department of Environmental Protection (PADEP).

An EDI project requires the services of individuals educated in both EDI and the applications that handle the data. For the purposes of identifying the various functions involved, this publication has assigned the following titles and identified functions with those titles: Program Officer, EDI Coordinator, EDI Application Programmer and Telecommunication Coordinator. A successful EDI implementation is dependent upon having the responsibility of the functions assigned, not the titles.

The **Program Officer** is responsible for the USEPA program interface. The Program Officer is responsible for ensuring that each project participant is in compliance with USEPA and EIIP regulations and EDI agreements, thus ensuring the integrity of the EIIP EDI transmissions.

The **EDI Coordinator** is responsible for the application program that uses the EDI data and for all problems at the application level including EDI documentation (e.g., wrong field, wrong data in field, missing fields, etc.). The Coordinator works closely

with the EDI Application Programmer and may assume some of the Program Officer duties.

The **EDI Application Programmer** is responsible for developing and maintaining the interface program that bridges trading partner applications to their EDI system. The Application Programmer is also responsible for all modifications and enhancements to the EDI system. This includes the resolution of problems that may arise between the trading partners' translator software.

The **Telecommunications Coordinator** is responsible for ensuring that the services provided under the Value Added Network (VAN), or other means of communication, are compatible with the prototype EDI requirements.

1.4 Introduction to EDI

EDI is the transmission in ANSI ASC X12 syntax, of unambiguous information of business or strategic significance between computers of independent organizations. The definition can be expanded further to include the electronic transmission of business documents from the application program of one computer to the application program of another computer within the framework of a standard format. The key elements in the definition are computer-to-computer and standard format. EDI reduces costs and errors associated with a paper document environment. EDI replaces the mail delivery and reentry of documents with the electronic mailbox and the delivery of business data directly to your computer application program.

1.4.1 EDI and ANSI/ASC X12 Standards

The American National Standards Institute (ANSI) was founded in 1918 as the national coordinator of the voluntary standards system for the United States. The system meets national standards needs by marshaling the competence and cooperation of commerce and industry, standards developing organizations, and public and consumer interests. ANSI coordinates the voluntary development of national consensus standards, approves standards as American National Standards, and serves as a clearinghouse and information center for American National Standards and international standards.

In 1979 ANSI chartered a new committee, known as Accredited Standards Committee (ASC) X12, Electronic Data Interchange, to develop uniform standards for electronic interchange of business transactions. This charter permits the adoption of national standards for EDI and enables all organizations to use a single agency (ASC X12) to develop and maintain transaction set standards.

ASC X12 develops Draft Standards for Trial Use (DSTU's) and publishes the entire set as a Version/Release annually. The purpose of the Release is to put current approved draft standards into the hands of users on a more frequent schedule, to speed implementation, reflect user needs in the standards more quickly and allow the user to gain experience with the draft standards before solidifying them as American National Standards.

Draft Standards for Trial Use undergo the ANSI-required public review process approximately every three to five years. ANSI-approved, published standards, including ASC X12 DSTU's, as of May 1994 number 198 with an additional 102 draft standards that are under review.

In developing the ASC X12 series of American national standards, the ASC X12 subcommittees seek to minimize the need for users to reprogram their internal data processing systems to achieve an interchange. Consequently, the standards are structured so that computer programs can translate data from internal to external formats and vice-versa. In this way, either through internally or externally developed translation software and public-communications vendors, all sizes of firms and institutions using intelligent computational devices may benefit from the use of the standard.

Through the use of this standard, all institutions can enjoy the efficiencies of a common interchange language rather than experience the difficulties of a proliferation of methods and procedures which could occur if each institution were to impose its own formats on every other institution with which it does business.

1.5 How to Use the Implementation Guideline

These guidelines follow the recommended format specified in the "ASC X12 Guideline for Electronic Data Interchange (EDI) Implementation Guidelines", ASC X12D/90-856, approved February 1991. Chapters 1-10 of this guideline contain information necessary for trading partners to fulfill the requirements for implementing the exchange of air emission modeling data using EDI.

These sections include the EDI business background and history, as well as policy and logistic issues that should be addressed. The appendices contain a checklist on how to get started with EDI, and provide conventions of the specific X12 transaction sets needed to satisfy the EDI information requirement for transmittal of data electronically.

1.6 References

Questions, comments, and suggestions regarding this EIIP EDI Implementation Guideline may be referred to:

Ms. Lee Tooly
U.S. Environmental Protection Agency
Emission Factor and Inventory Group
EIIP Data Management Committee
Research Triangle Park, NC 27711
Telephone: (919) 541-5292

Standards publications, guidelines, and technical reports disseminate the technical and logical concepts reflected in the X12 Standards. Data Interchange Standards Association publishes a catalog of the available standards. The information available from DISA includes Part I, which is a document entitled "An Introduction to Electronic Data Interchange". Part II is also available, which is a catalog of the ANSI/ASC X12 Publications. Any general or technical questions about EDI, ASC X12 committees, or the ANSI/ASC X12 Standards, can be directed to:

Data Interchange Standards Association, Inc. (DISA)
Technical Department
1800 Diagonal Road, Suite 200
Alexandria, VA 22314-2852
Telephone: (703)548-7005

SECTION 2 — BUSINESS ISSUES

2.1 Implementation Considerations

When implementing EDI, a multitude of business and technology questions must be asked and answered. As the application of EDI technology becomes more prevalent within the USEPA and the regulated community, many of the general issues associated with EDI implementation have already been addressed. Through the efforts of the EIIP DMC and their partners, an informed, receptive support team has developed. This team understands the issues related to EDI implementation and is working to ensure the success of ANSI/ASC X12 EDI as a means to electronically transfer air emission modeling data.

Although a majority of the business issues have already been considered during the development of this EDI project, a general overview of the prominent issues is presented in the balance of this section. As this phase of the EIIP EDI project is a prototype, not all the issues are of immediate concern. However, the information provided below must be addressed as the project moves toward a production environment.

At this time, because the initial implementation is a prototype activity, many of the requirements outlined below have not been finalized. Several issues that must be addressed for a production environment will be specified based on the result of the prototype efforts. These essential areas include, but are not limited to:

- Establishment of a formal EDI committee;
- Production implementation;
- Timing of transactions;
- Modes of operation;
- Security;
- Back-up and recovery procedures; and
- Audit considerations.

2.1.1 Establishing an EDI Committee

An EDI coordinating committee should be established. It is imperative that the EDI committee have a well defined and understood mission statement for itself and the designated project teams. This committee will be the focal point and control element for direction and communication. It should include representatives from all of the involved functions such as information systems, materials management, purchasing, sales, legal, audit, etc. The EDI committee will designate Project Teams to manage segments of the total project.

Another essential role of the committee is to interface with ASC X12. Because ASC X12 is responsible for the EDI standards that are implemented, a close relationship must be maintained by the EDI committee. Not only will this relationship help ensure that the EIIP's data maintenance requests are adopted, but that the EIIP has a presence and plays a role in the overall development of the national standards.

The EIIP Data Management Committee (DMC) is currently serving this function. The DMC provides subject area expertise for project reporting requirements, USEPA guidance for implementing the EDI system, management support to ensure the success of the project, and oversight of maintenance issues related to all components of the EDI system.

2.1.2 Implementation Suggestions

In developing the EIIP EDI air emission modeling project, the DMC performed rigorous analysis activities to ensure a successful approach and implementation. Although the planning and implementation of an EDI system is a complex undertaking some general approach recommendations can be made:

- Talk with experienced EDI users;
- Get involved with industry associations and standards organizations;
- Determine EDI objectives;
- Gain commitment from management, business units and support groups;
- Establish an EDI Implementation Team;

- Consider the extent to which internal systems are suitable for EDI;
- Select prototype/pilot partners with experience in EDI;
- Limit the initial effort to a few partners and transactions;
- Identify appropriate products with which to start;
- Begin with partnerships where transaction volumes are high;
- Integrate EDI with existing systems;
- Review tax, audit, and legal requirements;
- Evaluate hardware/software alternatives and make selections, carefully weighing the use of PC software for data entry and high transaction volumes;
- Provide an EDI training program (including training on EDI standards) for users;
- Enlist the assistance of experienced consultants and third parties;
- Establish agreements with trading partners;
- If applicable, be sure links exist to allow transmissions to flow between third parties;
- Have frequent progress discussions with partners and assign coordinator/contact;
- Define methods to handle exceptions and problems;
- Exchange documents in parallel mode for at least several cycles before initiation of live EDI data;
- Discontinue paper documents when EDI is operational;
- Publicize EDI benefits internally;

- Expand EDI efforts by establishing trading relationships with partners of varying sizes, EDI experience, and computer sophistication;
- Pursue EDI with only those partners where it makes business sense to do so;
- Participate in EDI industry and standards activities;
- Plan for significant up-front costs;
- Resist trading partners who want to use proprietary formats; and
- Get help from marketing, purchasing and other functional groups in the development of your EDI plans and architecture.

2.1.3 EDI Cost Justification

Short- and long-term benefits should be forecast when justifying the cost involved in implementing an EDI program. Trading partners face four general cost categories related to the implementation of an EDI system. These categories include:

- Application development costs;
- Supporting encryption when required;
- Modifying applications to capture the reporting data required (including hardware and software); and
- Message costs.

The cost of application development impacts all trading partners. Typically, existing applications with which EDI will be used require some modification. Trading partners that have no existing application will certainly incur application development costs. When evaluating the cost of application development or modification, three major cost areas should be addressed:

- Modification of EDI software to access the application systems;
- Support of encryption when required; and

- Modification of applications to capture the reporting data required.

Modifying applications may also entail upgrading system hardware and software platforms. The cost of these activities vary depending upon the current system architecture versus the required environment. Translation software costs also vary depending on the hardware and translation software selected for use. Consult with EDI translation software providers to determine the costs.

Message costs are a function of the transactions implemented, number of transactions, volume, frequency of transmission, time of day transmitting, method of transmission (direct, VAN, dial-up, etc.), VAN costs, and other factors.

2.1.4 Strategy for Implementation

Information needs to be collected to develop a successful strategy for implementing an EDI project. Consider the following when planning your implementation strategy:

- Develop a business applications/trading partners matrix;
- Designate EDI business contacts;
- Obtain contact information for Value-Added Networks (VAN);
- Obtain contact information for software providers;
- Determine what partner identification scheme should be used, (e.g., DUNS number);
- Define terms of exchange and establish an agreement between trading partners; and
- Develop an overall system data flow design.

Based on the information collected from business partners, develop an overall EDI plan. Conduct meetings/conferences with trading partners to define EDI plans and dates. Consideration should be given to those trading partners capable of doing EDI and having the desire to participate.

2.1.5 Transaction Sets

Determine the applicable ANSI/ASC X12 transaction sets that will be used and the minimum data that will be necessary to satisfy the application data requirements. Determine which acknowledgments shall be used.

The EIIP implementation uses the ANSI/ASC X12 841 Specifications/Technical Information transaction set. This transaction set is mapped in detail in the EIIP EDI X12 Convention Document which is located in the Appendix D of this document.

The ANSI/ASC X12 997 Functional Acknowledgment Transaction Set is employed in a production system. The use of the Functional Acknowledgment is a requirement of the USEPA for all EDI implementations. As this phase of the project is a prototype, this transaction set will not be employed.

2.1.6 Pilot Program

As stated previously, this phase of the EIIP EDI project is a prototype which differs from a pilot in a number of ways. The pilot is geared toward immediate evolution into a production environment. The prototype is a proof-of-concept step that is initiated to demonstrate the basic performance of the EDI and supporting systems. The prototype does not take into account many of the issues that must be addressed for a pilot and/or production system. Although this implementation guideline is produced for the prototype efforts, an understanding of the pilot program is important for future activities.

A pilot program is a method of initiating EDI that provides the ability to test concepts, practices, and EDI policies. A pilot program is the initial step of a production implementation schedule. The schedule should encompass the inclusion of all applicable trading partners into the EDI system. An integral part of a pilot program is to establish test criteria. These criteria must include:

- Coding and testing the interface to in-house system(s);
- Conducting system tests with translation software and network (if used);
- Conducting system tests with the trading partners using a test data file and/or testing with live data;
- Sending sample X12 data to trading partner; and

- Initiating parallel processing.

2.1.7 Education

Regardless of whether the EDI system is in prototype, pilot, or production stages, educating internal and external personnel in EDI is vital to the success of any EDI project. User personnel should be educated as to what EDI is, what implementation entails, why the organization is implementing the standards, and what impact it may have on the current procedures. Trading partner education regarding EDI transactions and future plans can be accomplished on an individual basis or through sponsoring trading partner conferences.

2.2 Timing of Transactions

A number of timing issues to be considered and resolved with trading partners when determining the timing of transactions include:

- When the business transaction(s) will be made available to the trading partner;
- Rules for acceptance/rejection of transmissions including time stamp of the transmission;
- Retention periods for both sender and network message storage transmission;
- Timings of the transaction acknowledgment;
- Methods of handling legal holidays;
- Deadlines for submission of the information and receipt of functional acknowledgments; and
- Abilities of the existing computer systems to respond within a specific time frame.

2.3 Modes of Operation

The two modes of operation are Production and Test. Production is used when both partners agree both systems are communicating the agreed upon data for the transaction sets implemented. The test mode is used when implementing a new

transaction, when making a modification to implemented transactions, or when upgrading to a new version/release. The trading partners should be aware of when the test mode will be used in order to provide assistance to each other. Identification of the mode of operation is contained in the ISA (Interchange Control Header) Position ISA15, Data Element I14. A "P" identifies production data and "T" identifies test data. Trading partner systems must have the provision to handle both production and test transaction sets.

The initial activities for the EIIP EDI project are a proof-of-concept and are considered to be a test environment. Therefore, the transactions that will be transmitted for the prototype will be designated as Test. Upon completion of the prototype further activities and decisions will be made to move to the production environment. Trading partners will be informed of the decisions and additional requirements for the Production system as appropriate.

2.4 Security

The risks inherent in the EDI process are based on the lack of paper documentation to backup the transactions. EDI involves the transmission of electronic messages, or records, that may never be converted to hard copy. Therefore, the electronic records must be able to stand alone as submission data. These records are subject to the same security requirements as are all types of USEPA data.

The EDI process must include all steps necessary to ensure that the records are authentic, are properly authorized, and are retained in a manner that will ensure the integrity of the records. Audit trails must be maintained for accountability.

The *integrity* of EDI messages is essential. Security controls must be in place to ensure that the message is not modified and that electronic records are protected from loss or destruction. In addition, if EDI messages contain sensitive or Confidential Business Information (CBI), adequate controls must be in place to protect the data from inappropriate disclosure.

The *authentication* of the originator is a critical security issue for EDI. The process must be able to ensure that the source of the message is the named originator.

Computer security plans must be developed for EDI. The resources allocated to protecting EDI systems must be based on the risk and magnitude of potential harm that could result from the loss, misuse, or inappropriate access to or modification of EDI data. Specific controls should be implemented for the following aspects of the EDI system:

Integrity - Controls, such as audit trails, access control mechanisms, and separation of duties must be in place to protect the integrity of EDI data. Controls within the EDI environment for protecting data integrity include the following techniques:

- Recalculating and verifying real totals and hash totals for critical parameters;
- Repeating messages or parts of messages rather than using only a functional acknowledgment; and
- Including unique identifier codes within each message to define each message as a separate distinct message.

Confidentiality - EDI systems processing confidential data, such as Privacy Act, CBI, or enforcement data must include access controls to restrict access to authorized personnel only. Access controls include technical controls, such as passwords or encryption, as well as procedural controls, such as restricted access to physical areas processing confidential data.

Availability - Contingency plans must be prepared to provide for continuity of operations in case of system failure or system degradation. Contingency plans should include backups on a periodic basis commensurate with the importance of the data maintained within the system. The contingency plan must also be tested periodically to ensure that it accounts for all possible threats to system and data availability.

Authentication - Authentication controls must be in place to ensure that the source of the message is the named originator. *Non-repudiation* should be used when authentication is a critical issue. Specific techniques for authentication include:

- Returning an acknowledgment for each message sent. A valid message will send an acknowledgment to the originator within a pre-specified time period;
- Utilizing specific log-on techniques; and
- Including secret (known only to the parties involved) reference numbers or passwords within the body of the message.

Written agreements - The use of written agreements can stipulate the specific security and authentication mechanisms to be used. When employed, they are valuable tools for ensuring communication and understanding between trading partners. If used correctly, written agreements clearly and formally state the requirements and conditions under which the trading partners will operate.

In addition, cryptographic techniques should be considered, especially for high-risk systems, to protect the confidentiality, integrity, and authentication of EDI systems.

Procedural controls can be implemented to protect the integrity, availability and confidentiality of information and systems. Procedural controls may be less expensive and easier to implement than technical controls. Procedural controls can include activities such as limiting physical access to data entry or computer areas, providing security training, creating security procedure manuals, and requiring separation of duties.

The laws and regulations mandating safeguards mandating safeguards for Federal information and information systems include:

- The Privacy Act of 1974 (P.L. 93-579);
- The Freedom of Information Act (5 U.S.C. 552);
- The Paperwork Reduction Act of 1980 (P.L. 96-511);
- The Computer Security Act of 1987 (P.L. 100-235); and
- U.S. Code, Title 18, Section 1905.

The organization that initiates an EDI system should take care to avoid making unreasonable demands of its trading partners. While the initiating trading partner may have the resources and expertise to handle an EDI system easily, this may not always be true of the other partner(s). These limitations of resources and expertise should be taken into account.

For the prototype efforts, at a minimum, the EIIP EDI trading partners will be required to support the current USEPA standards for security. The trading partner will be responsible for keeping their VAN log-on and local dial-up access numbers secure. If the trading partner suspects a security breach, it must contact the Program Coordinator immediately. USEPA, as an initiating trading partner, reserves the right to change trading partner access identification numbers (ID) and passwords at any time.

2.5 Backup and Recovery Procedures

Backup and recovery procedures are necessary to provide:

- Retransmission capabilities;
- Translator re-run capabilities;
- Minimum 24- to 48-hour immediate access backup; and
- Archive and recovery capabilities for individual EDI transactions.

The backup and recovery procedures must be thoroughly documented to allow anyone with the proper authority to access the system to retransmit data.

It will be up to each EDI partner to keep their own records and archives of EDI transactions sent and received. Either partner must have the capability to retransmit an EDI message.

The Functional Acknowledgment (997) transaction set can be used to provide a level of automation in the backup and recovery area. If the EDI system expects to receive a Functional Acknowledgment for every transaction it sends, the EDI message should be available for retransmissions until a Functional Acknowledgment corresponding to a specific EDI message is received. Once the Functional Acknowledgment is received, the original EDI message can be archived regardless of the normal archive timing.

The USEPA requires the use of the Functional Acknowledgment. The Functional Acknowledgment is used to confirm receipt of the trading partner's transmission and indicate acceptance or rejection of the transaction set by the translator. A Functional Acknowledgment is not required for a transmission of Functional Acknowledgments. Because this phase of the EIIP EDI project is a prototype effort, the Functional Acknowledgment will not be employed.

2.5.1 Disaster Recovery Considerations

Disaster recovery becomes correspondingly critical to the amount of business that is conducted through the EDI channels. Consider the consequences to you and your trading partners if you were suddenly unable to exchange transmissions for an extended period. It is unwise to assume that you can fall back on a paper-based system. Your trading partners may not be able to quickly switch from EDI messages to mailing their business transactions to you. You may not have immediate access to the resources within your organization needed to process paper transactions.

Develop a plan to deal with extreme problems, such as a total loss of a Data Center or computer system and a loss of a phone company switch station servicing your area.

2.6 Audit Considerations

One of the first questions raised when considering the use of EDI relates to its impact on controls. Without a signed document and a paper audit trail, how will one know when a transaction is valid and approved?

A major issue associated with the use of EDI relates to its impact on controls, particularly without a paper audit trail which includes hardcopy signatures. The same elements of control will exist in an EDI-based system that exists with a paper-based system. Most controls related to EDI fall into three categories: confidentially,

integrity, and authenticity. *Confidentiality* is the control that allows only authorized persons access to the transactions. *Integrity* controls validations of the data. *Authenticity* is the control that ensures the receiver that the transaction received is theirs and is valid.

The following are specific examples of controls within the confidentiality, integrity, and authenticity control categories.

Confidentiality

- Encryption is a method of logically scrambling the EDI information with an encryption key and giving the key only to persons who have a right to that information. The key is an electronic code for this procedure;

- Password protection is a method used to control access to files. Passwords should be changed often for maximum effect; and

- The use of a stand-alone computer for receiving EDI transmissions controls access to the main computer. Once the EDI data is on the stand-alone computer, it can be validated and uploaded to the main computer for use in applications.

Integrity

- Communications protocols provide bit count checking;

- Every X12 transmission contains Segment, Transaction Set, and Functional Group counts. Hash Total and selective segment counts are provided by certain transactions. Functional Acknowledgments are available to confirm transaction receipt and compliance to the standard; and

- Translators provide code validation and syntax checking.

Authenticity

- Value Added Networks (VANS) validate sender/receiver identifications and passwords;

- Translator Trading Partner Profiles validate sender identification, passwords, version/release, transmission sequence, and transaction set;

- Application programs validate personal Identification Numbers (PIN) and specified data contained in the transaction set (i.e., dates, reference numbers).

SECTION 3 — LEGAL CONSIDERATIONS

3.1 General Introduction

The information outlined below is essential for a production environment and should be considered when implementing a full EDI system. As this phase of the EIIP EDI implementation is a prototype, many of the components/issues identified have not been addressed. The necessary legal considerations will be fully addressed based on results of the prototype. The primary issues that will be address include, but are not limited to:

- Record keeping;
- Authentication;
- Trading Partner Agreements;
- Third-party Agreements; and
- Laws, rules, and regulations.

The EIIP EDI project was established to support facilities that voluntarily wish to share emissions data electronically. During the prototype phase of this project all requirements currently in affect for the reporting of air emission modeling data must continue. Regulations as currently written require the forms and signatures.

Businesses require control over their contractual and regulatory correspondence. Such control includes the determination of when correspondence is transmitted, to whom it is transmitted, when it reaches the recipient, and an appraisal of the accuracy, integrity and risks of the communication. Some of the legal issues include:

- Various offer and acceptance rules;
- The propriety of EDI in lieu of hard copy documents;
- The competency of sufficiency and evidence;
- Electronic mailbox controls;
- Legal and regulatory record retention issues;

- Ownership and liabilities; and
- Various risks of transmissions.

Most commercial law has been developed without specifically addressing electronic message systems. The precise legal status of EDI transmissions is therefore unclear in many cases.

EDI has been used successfully for a considerable number of years. For many companies, legal uncertainties have not posed a substantial obstacle to the adoption of EDI. In many instances, the legal risks of using EDI, when compared to the risks associated with traditional paper-based trading systems, have been considered to be manageable. Certain legal risks have been addressed with special agreements between trading partners and the adoption of appropriate in-house policies.

It is important that new users consult with counsel throughout the EDI implementation process. This chapter provides a very brief introduction to some of the issues counsel should consider when a new user implements EDI. The full range of issues that must be dealt with, and the importance of any particular issue, will vary from one user to the next.

EDI implementation should initiate a process by the business entity of rethinking its entire records management and retention policies. The ultimate decision regarding scope and retention period of electronic records depends on the company's overall business strategy and requirements.

3.2 Record Keeping

The Phase I EIIP EDI prototype project is intended to facilitate the submission of data from State/Local Air Quality Agencies to the USEPA. The hard copy retention of forms is an individual program consideration that may be specified in regulations.

Internal control systems should be reevaluated in the context of EDI to assure responsibility for data maintenance, including audit trail, transaction reconciliation, and backup capability.

When business transactions are recorded on paper documents, businesses can store those documents as evidence of what took place. The intent of EDI is to eliminate the transmission of paper documents. Internal record keeping systems should therefore be reevaluated in the context of EDI. The ideal EDI record retention system meets the following record keeping criteria:

- Copies of all EDI transmissions must be retained;
- EDI transactions must be retained in both the original and translated format in addition to normal application file retention;
- Storage medium for EDI transactions must be determined;
- Transmission activity logs containing pertinent time information must be retained;
- All programs used in the EDI system must be retained for the life of the record retention;
- Records must be able to be retrieved in a form that can be admissible in any judicial or other proceedings; and
- Record retention periods must be established.

At this time, requirements for record have not been finalized. At a minimum, the EIIP EDI Trading Partners will be required to support the current USEPA standards for record keeping.

3.3 Authentication

Authentication refers to the establishment or verification of a claimed identity. This may be the sender or receiver associated with a message. Authentication of an EDI transaction is contained within the transaction. All EDI transactions have the ability to identify all parties involved.

It is important that the source and the integrity of data transferred between the trading partners be assured before the data is manipulated. The security and controls needed to provide a proper level of assurance is a business decision that should be based on an assessment of the risks involved. The decision to implement a Message Authentication Code (MAC) should be mutual between trading partners and stated as a requirement in the Trading Partner Agreement.

Traditionally, paper documents and signatures have been used to authenticate the data that constitute commercial transactions. Authentication of EDI transmissions requires different methods of authentication. With the implementation of any particular EDI system, users and their counsel should ask the following questions within the context of the user's particular needs:

- Will the integrity and completeness of data transferred between trading partners be adequately assured before it is relied upon?
- Will the source of a message, and the legal authority of that source, be satisfactorily verified before the message is relied upon?
- If determined necessary, will adequate records be kept to show that authenticity of messages was tested?

EDI poses no different threat from any automated system that utilizes telecommunications. The issue is automation and electronic data vs a paper-based system. EDI formats simply provide a structure to that data.

3.4 Trading Partner Agreement

Trading Partner Agreements (TPA) are an important part of any EDI system. They serve as the "interface specification" between trading partners and provide specific details of the legal agreements that define how the electronic commerce is to be conducted. Qualified legal advice is required when a TPA is drafted.

However, the TPA must be more than a legal agreement between two organizations that exchange data. Because the use of an electronic medium affects the trade relationship, TPA's are generally recognized as fundamental to the EDI trade relationship. TPA's can:

- Bolster the enforceability of electronic transactions;
- Reduce confusion and potential misunderstanding;
- Apportion liability between the trading partners;
- Define confidentiality and security obligations;
- Serve as an educational tool and implementation checklist; and
- Provide an important audit and control mechanism.

The scope and treatment of issues addressed by a TPA generally depend on:

- The nature of the anticipated transactions;

- The policies and perspectives of the trading partners;
- An assessment of the risk; and ultimately
- The issues upon which the trading partners reach agreement.

The TPA should have the following characteristics:

- Administrative efficiency;
- Simplified legal approval;
- Definiteness; and
- Certainty to expedite trade.

Appendix B contains the USEPA's generic Terms and Conditions Agreement for the use of EDI for Environmental Reporting. Although this agreement is not referred to as a trading partner agreement, it serves the same purpose. The document and other information pertinent to the use of EDI within the USEPA can be found in the notice posted in the September 4, 1996 Federal Register, Volume 61, Number 172, FRL-5601-4

For the prototype efforts, TPAs are not being initiated by the USEPA, however, as the EDI system moves into production, they should be implemented.

3.5 Third-Party Agreements

If a user employs a third party, such as a VAN, to facilitate its EDI system, the company that supplies the services will probably require that the user enter into a data communications agreement with it. Among the issues the user should consider addressing in such agreement are the following:

- A description of the services to be provided;
- The warranty by the VAN of its services;
- The liability of the VAN for a breach of the agreement or any damages resulting from the mistakes of the VAN or its employees;
- The security, confidentiality, and integrity of messages handled by the VAN;

- The responsibility of the VAN in the event of a system failure or disaster;
- The disposal of data stored by the VAN in the event of a disagreement or an interruption or termination of services;
- A description of the applicable pricing structure;
- The termination of the agreement; and
- An assumption of an independent, third-party review of the third-party vendor.

For the prototype, VANs or other third party vendors are not being employed. Therefore, as with TPA's, Third-party agreements are not being initiated by the USEPA. As the EDI system moves into production, agreements should be implemented as appropriate.

3.6 Laws, Rules, and Regulations

There is no adequate or comprehensive source of EDI law, but there are a few sources of laws, rules and regulations that users may wish to consult. They are available through the American Bar Association (ABA). Other sources may be applicable for transactions within specific markets, industries or jurisdictions.

When implementing EDI, users and their counsel should consider whether any special laws, rules or regulations apply to the users. Utilities and government contractors should carefully consider whether regulations applicable to them restrict the implementation of EDI. It is not uncommon, for example, for government regulations to require documents to be written on paper or have ink signatures.

Users should also be aware that the International Chamber of Commerce has adopted Uniform Rules of Conduct For Interchange of Trade Data by Teletransmission (UNCID). UNCID purports to set forth voluntary rules of communication by EDI users. A copy of the UNCID rules may be obtained from the ICC Publishing Corporation, 156 5th Ave., New York, New York 10010. It should be noted that ANSI X12 neither endorses nor opposes UNCID.

SECTION 4 — ENVIRONMENTS

4.1 System Architecture

The graphic description of how the software and hardware are assembled to support the needs of the user is called the system architecture. The system architecture relates primarily to the needs of the end user rather than technique or technology. The system designer, as with any other architect, must satisfy the user's requirement within the constraints of serviceability and cost.

There are three basic EDI system architectures:

Stand-alone Microcomputer: Outbound transactions are keyed into the microcomputer. Inbound transactions are transferred to an attached printer. Translation software (to/from ANSI standard) resides within the microcomputer. Communication software/hardware handles both inbound and outbound transactions.

Microcomputer/Minicomputer Front-End: The microcomputer serves as a front-end processor to the mainframe. The translation software (to/from ANSI standard) resides within the microcomputer.

Mainframe/Minicomputer: All processing is performed within the mainframe. Inbound transactions are received by the mainframe, translated, and forwarded for further processing. Outbound transactions are consolidated, translated, and transmitted. Network communications hardware/software are under the control of the mainframe.

With the addition of Value-Added Network services, you can "mix and match" the basic architectures and let the network manage the complexity of different hardware/software. The networks provide the capability of indirect communications through the use of electronic mailboxes and support code, speed, and protocol conversion. Specifics may be found in the applicable project EDI guideline.

The EIIP EDI prototype project will employ the Microcomputer/Minicomputer Front-End scenario. The data that will be transferred using the EIIP EDI X12 Specifications/Technical Information Transaction Set will reside in the database system of the sending trading partner. The EDI translation and communication software will reside on a microcomputer (PC) that is capable of interfacing with the database system. An application program interface (API) will also reside on the PC and will serve as the mechanism to extract the data to be transmitted from the database system.

To initiate the process, the trading partner will access the database system using the API. The API reformats the database output into an ANSI/ASC X12 formatted file and loads the data into the EDI translation software. The EDI translation software translates the data into the ANSI/ASC X12 841 Specifications/Technical Information Transaction Set per the EIIP X12 EDI Convention Document. The transaction set is transmitted to the receiving trading partner.

For the EIIP EDI prototype project, communication will be performed point-to-point (refer to Section 6 for more information). Therefore, the data will be sent directly between the sending and receiving trading partners. If a VAN or other third party service were used, the data would be transmitted through the service provider to the receiving trading partner's mailbox.

For the EIIP EDI prototype project, both trading partners will have similar architectures (i.e., microcomputer/minicomputer front-end). Therefore, the EDI transmission will be received by a PC, where the data will be translated from the X12 format to one that is able to be loaded into the receiving database system. The receiving API residing on the receiving trading partner's PC is responsible for loading the transmitted data into the appropriate database system.

The following outline organizes the steps that are needed to report air emission modeling information for the EIIP EDI prototype project.

A) Air emission modeling data is collected by the trading partner and entered into their database system. It is retained until it is ready for reporting to the appropriate USEPA trading partner.

B) The trading partner initiates the EDI transmission by retrieving the data from the database system through the application program interface (API) where it reformatted for translation by the EDI translation software.

C) The EDI translation software processes the information, putting it into ANSI/ASC X12 syntax. If syntax errors are noted, the data must be corrected to eliminate the errors and the translation process is repeated until completed.

D) The EDI transmission is uploaded to the receiving trading partner over a dedicated point-to-point communication network or other means of point-to-point communication. A copy of the transmission data is maintained by the trading partner as a record.

E) The EDI transmission is retrieved by the receiving trading partner. A copy of the transmission is maintained by the trading partner as a record.

F) The receiving trading partner enters the transmission into the translation software, verifies the transmission, and translates the data. A copy of the translated data is maintained by the trading partner as a record. The ANSI/ASC X12 997 Functional Acknowledgment Transaction Set is generated by the translator and returned to the sending trading partner.

G) If retransmission is necessary due to errors, the initiating trading partner is contacted to retransmit the data. Upon receipt, the receiving trading partner begins the retrieval activities again until the transmission is completed.

H) The translated data is downloaded into the receiving database system via the receiving trading partner's API.

4.2 Application Integration

Application refers to the current functional processes which may or may not be automated. To take full advantage of EDI, the EDI solution should become part of the functional processes and not an "add-on". EDI will change the way you conduct your business. Planning for integration will reduce the impact of this change and allow a smooth transition to an environment which maximizes your return on investment.

Total integration does not have to be achieved before starting EDI, but it should be an established goal. Failure to achieve integration will result in the attainment of some short-term benefits, but the real benefits which come from increased automation will be unattainable.

For the EIIP EDI prototype project, the goal is to electronically integrate the database systems of reporting entities (e.g., USEPA Regional offices, State/local agencies, industry, etc.) currently storing air emission modeling data with a mechanism to electronically transmit the data. By doing so, the burden of manual reporting of modeling data will be reduced and the availability and quality of the data can be increased.

To achieve this end, an API will be used to electronically retrieve data from the databases that store the appropriate modeling data. The API will also reformat the

data for EDI translation. The EDI translation software formats the data from the API into the ANSI/ASC X12 EDI standard format for transmission. Likewise, the reverse process will be performed by the receiving trading partner's system. Ultimately, in a full production system, each of the data management steps will be seamless to the trading partners and the air emission modeling application will be fully integrated.

4.3 Translation

Translation is the automated process of converting application data in a proprietary format to ANSI/ASC X12 Standard format for sending transactions. The process is reversed when transactions are received in the ANSI/ASC X12 formats. The core translation program uses "table driven" subroutines to generalize processing regardless of the actual application being processed. Specifications are taken by the program, depending on the data being processed and the particular tables associated with the transaction set. The ANSI/ASC X12 standard provides a specific structure for the data. It does not affect the program design or the program function. As a result, there are many commercial software packages which provide "core translation" and other related functions that are designed to support different EDI environments.

Some of the factors to be considered when deciding whether to make or to buy translation software are the efforts required for programming, maintenance, testing, incorporating upgrades to the ANSI/ASC X12 Standard, and the development of the administrative programs necessary to satisfy EDI audits. The availability of relatively inexpensive proven commercial software packages supported by a growing industry should make development unnecessary. EDI software should be managed as "system software" rather than "application software".

The EIIP EDI prototype project is using a PC-based EDI translation software package. The software supports the ANSI/ASC X12 standard that the program is implementing (the 841 Specifications/Technical Information) and provides functionality to verify ANSI/ASC X12 syntax rules, support communications, and import/export data to database systems/APIs.

SECTION 5 — MAINTENANCE

5.1 Maintaining Guidelines

During the prototype implementation, maintenance of this guideline, the attached EIIP X12 841 Convention Document, and the EIIP Phase I Core Data Model is the responsibility of the EIIP Data Management Committee. Questions are to be referred to:

Ms. Lee Tooly
U.S. Environmental Protection Agency
Emission Factor and Inventory Group
EIIP Data Management Committee
Research Triangle Park, NC 27711
Telephone: (919) 541-5292

5.2 Maintaining ASC X12 Standards

ANSI/ASC X12 has a standard procedure for developing new transaction sets and maintaining existing sets. Refer questions regarding the national standard to the EIIP EDI Coordinator indicated above. Should additional information be required, the question will be referred to:

Data Interchange Standards Association, Inc (DISA)
Technical Department
1800 Diagonal Road, Suite 200
Alexandria VA 22314-2852
Telephone: (703) 548-7005

5.3 Version/Release

ANSI/ASC X12 publishes a new Version/Release of the national EDI standards annually. The publication contains the new transaction sets and the maintenance approved by the ANSI/ASC X12 Committee. New Version/Releases are neither upward nor downward compatible with respect to other version/releases of the standards. The new publication may not affect current implementations. However, if it contains functionality necessary to the particular implemented project, the EIIP EDI Project Coordinator will initiate the necessary actions to notify the implementors, develop an implementation schedule, revise and distribute the implementation guidelines and convention documents and coordinate an orderly transition to the new Version/Release.

The ASC Draft Standard for Trial Use (DSTU) Version 4, Release 1 (004010) was used for the EIIP EDI conventional mapping. Support for versions other then 004010 will be handled on a case-by-case basis and will be controlled by the EIIP EDI Project Coordinator. The EIIP DMC will retain the option of updating standards as new transaction sets and standards are approved.

SECTION 6 — COMMUNICATIONS

6.1 General Introduction

This section provides an overview of the communication options available to trading partner(s) planning to implement EDI. The section's purpose is to highlight the areas where key data communication decisions must be made. There is no single or preferred solution. Each trading partner must determine the proper approach based on current and projected transaction volumes and desired level of investment.

Communications is the transport of information in an EDI environment and may be by physical or telecommunication means. Physical means include the use of magnetic tape or courier service. Data communication means the use of a public or private telecommunications network to exchange data. Criteria to be considered when determining the communication mode for data transfer include the following:

- Distance of transport;
- Number of destinations;
- Costs;
- Delivery time frame;
- Frequency of transport;
- Security;
- Volume of transactions;
- Compatibility of media; and
- Reliability

Each exchange method should be analyzed to determine whether or not the approach meets the trading partners' communication needs. No matter which approach is selected, a contingency plan should be formulated to address the possible event of a communication failure.

Issues to consider are procedures to address system failures, transmission error recovery including establishing the maximum number of retransmission attempts, security, network response time, and error reporting.

6.2 Protocols

Protocols are a set of conventions between communicating devices. Simple protocols define only hardware configuration. More complex protocols define timings, data formats, error detection, and correction techniques.

6.2.1 EDI Data Transfer Protocol

Communication capability, security, and data integrity are communication protocol issues to be addressed by EDI trading partners.

Communication Compatibility

- Electrical Signaling
    - Signaling between communication hardware, modem communication, and channel modem;
    - Modem types; and
    - Transmission speed compatibility
- Line Control Protocol
    - Between communications software, such as asynchronous, binary synchronous, and other protocols;
    - Call establishment;
    - Data blocking and organization;
    - Acknowledgment and signaling for handshaking and error control;
    - Line turnaround procedures;

- Character synchronization; and
- Escape interrupt disconnect

- Data Transfer Protocol
  - Compatible EDI data transfer programs and techniques for managing data transfer.

Security

- EDI data going only to the intended trading partner;
- Control over access to communications and business systems;
- Identification and authorization of trading partners; and
- Authentication

Data Integrity

Data Transfer Process Integrity refers to the actions taken to prevent problems. An objective of the EDI communication system is to provide a high degree of data process integrity to:

- Minimize potential loss of data by providing intermediate safe storage, interchange authorization, retransmission approval, and mutual results commitment;
- Minimize the potential for data duplication by providing temporary data suspension; and
- Minimize the potential for situations that require human intervention by providing status retention and transfer restart capabilities.

Error detecting protocols should be considered as the minimum communication requirement for EDI. Asynchronous and binary synchronous communication protocols provide error handling techniques based on the specific implementation.

6.2.2 Transmission Protocols

Transmission or data link protocols are either character-oriented or bit-oriented.

- ***Character-oriented protocols*** use a particular code set for transmission with some of the characters in the code set reserved for control functions. Asynchronous and binary synchronous protocols are examples of character-oriented protocols.

- ***Asynchronous protocol*** is synchronized by sending and receiving Data Transmission Equipment (DTE) before each character is sent. Each character has a start and stop bit to indicate beginning and end of each character. The start and stop bits are the mechanism by which synchronization is established. Typical asynchronous communications accommodated by microcomputers are transmitted at a baud rate ranging between 300-9600 bits per second (BPS). Asynchronous accuracy is inversely proportional to the speed of the data transfer. Higher levels of accuracy can be obtained through the use of XMODEM, KERMIT, and others.

- ***Binary synchronous*** or bi-sync bit synchronization is established for a much longer duration, usually for the time it takes to transmit several thousand bits. This results in less transmission overhead but requires more complex circuitry. Typical binary synchronous communication is transmitted at a baud rate ranging between 2400-9600 BPS. Binary synchronous accuracy is not dependent on the speed of the data transfer.

- ***Bit-oriented protocols*** are independent of any particular code set and no character codes are reserved for control functions. High Level Data Link Control (HDLC) and Advanced Data Communication Control Procedures (ADCCP) are examples of this protocol. The major advantages are in speed and standardization.

6.3 Point-to-Point (Dedicated Network)

At this time, the EIIP EDI prototype project will employ the point-to-point type of communication network. A general description is provided below. The actual details for the implementation of a point-to-point network will be developed based on the prototype results.

Point-to-point or direct connect service is communication between two trading partners. Point-to-point may employ dedicated circuits, or dial circuits, or a combination of the two. The type of circuit used depends on a number of factors, two of which are volume and speed or timing of the transmissions. An EDI user that elects direct communication with trading partners must have the necessary in-house staff capable of managing the network and must address a number of issues with each individual trading partner. Some of these issues are:

- Service Levels;
- Communication Speeds;
- Transmission Modes;
- Modem Capabilities; and
- Line Protocols

Additionally, an EDI user electing to implement direct connections must be aware that not all trading partners will have similar capabilities and therefore the trading partner may by necessity elect to use a third party service.

6.4 Third Party Services

Although the EIIP EDI prototype project is not employing third party services at this time, a general overview of this type of communication service is provided below.

Third-Party Services are those utilizing switched network technology and providing value-added services. Switched networks connect and disconnect circuits as required to exchange data. The three common switched network methods are circuit switching, message switching, and packet switching.

Circuit Switching is used in public telephone systems. A circuit is dedicated between the source and destination for the duration of the transmission. The sender and receiver must be available at the same time.

Message Switching networks package the data in messages and pass the messages from switch to switch. The sender and receiver do not have to be available at the same time, since the message is stored at each intermediate step. For this reason, message switched networks are also referred to as store and forward networks.

Packet Switching is similar to message switching, but it divides the data into smaller, equal-sized pieces called packets. It takes less time to move data through the network, since large messages don't have to be stored at each intermediate switch. The reduced delay, over message switching, allows the two users to carry on a dialogue, referred to as an interactive process. In addition, the reduced delay aids transaction processing by moving the transactions to their designation quickly. The advantage of packet switching over circuit switching is that packet switching makes efficient use of the data lines. Each packet carries a destination address, so packets from multiple sources heading to different destinations can be transmitted down the same data line.

The above facilities and services may be obtained from commercial networks called Value Added-Networks (VAN) rather than developed in-house. The commercial networks provide the network management and knowledgeable staff to support your communication requirements. Commercial networks now offer more than moving data from one site to another. Services provided include mailbox service, data storage, speed and format conversion, and translation.

Not all companies have the communication facilities to accommodate the multiple communication protocols that may be used by their potential trading partners. Third-party service providers eliminate the need for a trading partner to invest heavily in communication hardware, software, and personnel. A third-party service provider allows the convenience of a single data transfer link to multiple trading partners independent of operating schedules, protocol conversion, hardware interface, and conversion requirements.

When selecting a third-party service provider, a trading partner should evaluate the service capabilities and performance offered. Issues to consider include:

- Speed of delivery;
- Dial out capabilities (e.g., auto-dial, scheduled);
- Data integrity;
- Reliability;
- Job queuing options;
- Interconnect capabilities; and

- Tracking and control reporting (audit, historical, and exception reporting)

Before data transfer begins with a third-party service, communications should be mutually defined and agreed upon. The use of third-party communications should be transparent to trading partners.

When establishing an EDI partnership, it is necessary to determine how the costs of third-party services will be apportioned. These costs are usually split equally between the trading partners. Costs associated with the use of a third-party service include:

- Start-up charges;
- Mailbox fees;
- Connect charges;
- Data storage;
- Network interconnect;
- Character charges; and
- Reports

A third party agreement between the trading partner and a telecommunications provider should be signed. Section 3.5 lists items that should be included in a third party agreement.

6.5 Network Interconnects

As with the use of third-party services, the EIIP EDI prototype project is not currently employing network interconnects. However, they should be noted as a viable means of exchanging data when each trading partner wishes to use its preferred VAN. It is the responsibility of each partner to research whether its preferred VAN has the full complement of desired interconnect capabilities with the other.

6.6 The Internet

Although not currently employed with the EIIP EDI prototype project, the Internet is type of third-party service that can be used to transmit data using EDI. The Internet

can be a more cost affective means to exchange information using the ANSI/ASC X12 standards, but the level added value is reduced as compared to the use of a VAN. The Internet supports message switching and telecommunication access, but no other more robust types of messaging support. Functional issues such as audit reporting, security verification, user support, and any other system requirements must be evaluated prior to implementing the Internet as a telecommunications mechanism.

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SECTION 7 — MISCELLANEOUS

7.1 Industry Business Models

7.1.1 Introduction

The USEPA has implemented a number of ANSI/ASC X12 Transaction Sets. Selection of a transaction set is based on the specific business issue to be solved and the defined purposed of the transaction set. It is the intention of the USEPA to use national standards where they exist and to avoid developing specific purpose transaction sets.

The following is an overview of the ANSI/ASC X12 Transaction Sets used by the EIIP in the implementation of EDI.

7.1.2 Transaction Sets

The EIIP implementation currently uses the ANSI/ASC X12 841 Specification/Technical Information Transaction Set. Under other USEPA initiatives, this Transaction Set is also used by the Pennsylvania Department of Environmental Protection (PADEP), Bureau of Air Quality (BAQ) to receive air emission inventory data.

For the Phase I of the EIIP EDI prototype project, the transaction set is used to transmit air emission modeling data between reporting State Agencies and the USEPA. This implementation will be expanded in the future to include reporting from regulated industries to the State Agencies and/or USEPA Regions.

The ANSI/ASC X12 997 Functional Acknowledgment Transaction Set is also employed in a production system. The use of the Functional Acknowledgment is a requirement of the USEPA for all EDI implementations. As this phase of the project is a prototype, this transaction set will not be employed.

7.2 Related Industry Topics

Not Currently Used.

7.3 EDI Vendor References

EDI is offered as a standard interface so trading partners, software manufacturers and VANs can interact without concern for proprietary features. To achieve this, trading

partners must obtain and employ the necessary and appropriate X12 translator software and communications software. These software components can be obtained from a number of sources, including: purchasing the package from a vendor for use on the trading partner's computer system, purchasing the services of a VAN to administer the software remotely, or developing the software in-house. Before developing an in-house translator, examine the development costs and the maintenance costs. A new version/release of the ANSI/ASC X12 Standard is released annually with sub-releases available for standards approved for publication in February or in June. When updated EDI standards are available, they may or may not need to be implemented. Implementation of an updated Version/Release is governed by the enhanced business support it provides, the need for that enhanced support by the trading partners, and the desirability on the part of the trading partners to maintain previous Versions/Releases.

For the purpose of the EIIP EDI projects, trading partners shall acquire the EDI software that best meets their needs for interfacing with the USEPA Program Offices and with other trading partners they may have.

The USEPA does not recommend or endorse any vendors translation or communication software. Listings of EDI software and service vendors can be obtained through ANSI/ASC X12, EDI periodicals, and trade journals. The following provides some ideas for minimum capabilities/criteria to consider. The software should support the following specifications:

Operating System

- Support the operating platform and operating environment configuration specified by the organization.

Communications and Security

- Support the capability for sending and receiving EDI-formatted data.
- Support all connections to multiple VANs or direct connects to trading partners.
- Support multiple communications protocols including async, bisync, and X.400/X.25.
- Support the use of EDI transactions over the Internet, including appropriate security measures.

Security

- Support security options such as password, Personal Identification Number (PIN), menu and access type security.
- Provide built-in virus protection.
- Provide automatic recovery in the event of a system shutdown.

Reporting and Auditing

- Automatically verify inbound and outbound data to determine whether they are in compliance with EDI standards.
- Automatically notify user when errors occur.
- Maintain detailed history logs of all processes performed to determine error status and track processing activity.
- Provide automatic matching of audit trail reports of inbound and outbound functional acknowledgments with their associated outbound transaction set.
- Provide flexible error processing conditions and allow a variety of reports that describe and diagnose errors.
- Provide reports on document types, document numbers, control numbers, file names, error status, acknowledgment status, and transaction volume statistics based on user-selected criteria.

Data Management

- Provide the capability for an application system interface program to extract data from an application system and create fixed-length files for subsequent translation to an EDI format. The reverse is also required.
- Support manual data entry of outbound EDI data through data entry screens.
- Support batch downloads from an application interface linking the translation software to an organization's application system.

- Support flexibility in defining pre- and post-communication processes which could include interface routines, programs, and command procedures.

- Support scheduled or manual file purging.

- Support the ability to import from and export to flat file formats.

- Support the ability for inbound transactions to be printed or viewed on-line in a human readable format.

- Support the ability to archive all intermediate input and output data files.

- The software should provide a facility that monitors the use of internal business document identification numbers, such as manifest numbers, to avoid duplication.

Translation

- Support ANSI/ASC X12 standards, all current and future versions, releases and implementations and all X12 transaction sets.

- Include predefined tables of standard transactions, segments, and elements and allow copying of standard tables to create customized standards.

- Support the ability to define cross reference tables. These tables are used to reconcile codes if trading partners use different codes from recipient and/or the standard.

- Provide the capability for automatically sending and receiving Functional Acknowledgments to identify the successful receipt of information by Trading Partners and the highlighting of unacknowledged transaction sets that have been sent.

- Allow customizing of core translation and error notification scripts.

Mapping and Trading Partner Configuration

- Support automated data-mapping procedures embedded in the EDI translation software that creates fixed-length files according to the user's requirements for subsequent translation to an EDI format. The reverse process should also be provided.

- Provide for multiple conditional processing. This is the ability to use multiple data elements from a transaction set to generate a single data element for the output flat file and vice versa.

- Allow maps, profiles, and other user-defined tables are able to be migrated from one X12 version to another without having to manually reenter the information.

- Provide the facility to maintain a profile of each Trading Partner that identifies the name, Dunn &Bradstreet number, organizational identifier, phone numbers, and segments in a transaction set required by the Trading Partner.

Application System/Database

- Allow database definitions, operations, algorithms, and other processing rules to be defined through dynamic, table-driven tools. All tables should not be imbedded in code - only program functions should be in the executables.

Ease of Use

- Provide straight-forward, well-organized, intuitive user interface with a point-and-click Graphical User Interface (GUI).

- Provide table-driven utilities to modify/create transactions, trading partner data, and maps.

Support

- The software vendor should provide technical documentation, user documentation, maintenance support, help desks, tutorial packages and training support to assist the Trading Partners in the use of the translation software.

- Provide software and software upgrades as applicable and within an appropriate time frame.

Miscellaneous

- Proven track record in EDI as indicated by its use other sites and the provision of references of other users.

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SECTION 8 — GLOSSARY OF TERMS

AFS, AIRS Facility Subsystem, Federal database.

AIRS, Aerometric Information Retrieval System, Federal database.

ANSI, The American National Standards Institute (ANSI) is the national coordinator for standards in the United States.

ANSI Standard, A document published by ANSI that has been approved through the consensus process of public announcement and review. Each of these standards must have been developed by an ANSI committee and must be revisited by that committee within five years for update.

ASC X12, An abbreviation for Accredited Standards Committee (ASC) X12. It is comprised of a non-profit clearing house and coordination body for voluntary data standards activities in U.S. The purpose is to develop uniform standards for the electronic interchange of business transactions for submission to ANSI for subsequent approval and dissemination.

Authentication, A mechanism that allows the receiver of an electronic transmission to verify the sender of the integrity of the content of the transmission through the use of an electronic "key" or algorithm, which is shared by the trading partners. This is sometimes referred to as an electronic signature.

CAAA, Clean Air Act Amendments of 1990.

CFR, The Code of Federal Regulations contains the detailed regulations, written by Federal Agencies, to implement the provisions of laws passed by Congress. Regulations in the CFR are equivalent to Federal law.

Compliance Checking, A checking process that is used to ensure that a transmission complies with ASC X12 syntax rules.

Composite Data Element, One or more component data elements delimited by sub-element separators.

Condition Designator, An indicator assigned to each data element in a segment and defines how it is to be used in the segment. Data elements may be designated as Mandatory (M), Optional (O) or Relational (X). Refer to ANSI/ASC X12.22 Data

Segment Directory Introduction and ANSI/ASC X12.6 Application Control Structures, paragraph 3.7.2.2 - Condition Designator.

Control Segment, A control segment has the same structure as a data segment but is used for transferring control information for grouping data segments. Examples of types of Control Segments are Loop Control Segments (LS/LE), Transaction Set Control Segments (ST/SE), Functional Group Control Segments (GS/GE), and Interchange Control Segments (ISA/IEA, TA1). Control segments are defined in ANSI/ASC X12.6 - Application Control Structures, paragraph 3.10 - Control Segment. Interchange segments are control segments and are defined in ANSI/ASC X12.5 - Interchange Control Structures. Diagrams of the segments appear in ANSI/ASC X12.22 - Data Segment Directory and are identified as 'control segment'.

Conventions, Common practices and/or interpretations of the use of the ASC X12 standards, as agreed upon by two or more trading partners. Conventions define what is included in a specific implementation of an ASC X12 standard.

Data Element, A data element can represent a qualifier, a value, or text (such as a description). Each data element is identified by a number used for reference in ANSI/ASC X12.3 - Data Element Dictionary.

Data Element Dictionary (X12.3), Defines specifications for each data element.

Data Element Length, This is the range, minimum to maximum, of the number of character positions available to represent the value of a data element. A data element may be of variable length with range from minimum to maximum, or it may be of fixed length in which the minimum is equal to the maximum.

Data Element Reference Number, Identifier assigned to each data element as a unique identifier. It is used in all segments to aid in locating the data element definitions in ANSI/ASC X12.3 - Data Element Dictionary.

Data Element Requirement Designator, A code defining the need for a data element value to appear in the segment if the segment is transmitted. The codes are mandatory (M), optional (O), or relational (X).

Data Element Separator, A unique character preceding each data element that is used to delimit data elements within a segment.

Data Element Type, A data element may be one of the following types: numeric (Nn), decimal number (R), identifier (ID), string (AN), date (DT), time (TM), binary (B), or fixed-length string (FS).

Data Model, A description of the principles of organization of a database, including data entities, attributes, relationships, and data specifications.

Delimiters, The delimiters consist of two levels of separators and a terminator. The delimiters are an integral part of the transferred data stream. Delimiters are specified in the interchange header and may not be used in a data element value elsewhere in the interchange. From highest to lowest level, the separators, and terminator are segment terminator, data element separator, and sub-element separator.

DISA, Data Interchange Standards Association. A non-profit organization which serves as the Secretariat for X12.

Direct Transmission, The exchange of data from the computer of the sending party directly to the computer of the receiving party. A third-party value added service is not used in a direct transmission.

DMC, Data Management Committee of the U.S. USEPA Emission Inventory Improvement Program responsible for the administration of issues related to air emission modeling data.

Draft Standard for Trial Use (DSTU), A document approved for publication by the full X12 committee following membership consensus and subsequent resolution of negative votes (Final Report of X12 Publications Task Group). The Draft EDI Standard for Trial Use document represents an ASC X12 approved standard for use prior to approval by ANSI.

ECOS, Environmental Council of States, air emission modeling workgroup.

EIIP, Emission Inventory Improvement Program sponsored by the USEPA to address the collection and use of air emission inventory/modeling information.

Electronic Data Interchange (EDI), The abbreviation for electronic data interchange, which is commonly defined as "the computer-to-computer exchange of business information in a standard format." An EDI transmission is a highly structured message intended for automated processing by a computer. It is meant to be machine-readable so that it doesn't require human intervention to be interpreted and

understood. EDI is primarily used for intercompany communication. All references to EDI under USEPA programs refers to the utilization of ASC X12 standards.

EDI Translation, The conversion of application data to and from the ANSI/ASC X12 standard format.

EDI Translator, Computer software used to perform the conversion of application data to and from the X12 standard format.

EFIG, Emission Factor and Inventory Group of the USEPA.

Electronic Envelope, Electronic information that groups a set of transmitted documents being sent from one sender to one receiver.

Element Delimiter, A single-character that follows the segment identifier and each data element in a segment except the last.

Electronic Mailbox, The place where an EDI transmission is stored for pickup or delivery within a third-party service provider's system.

Encryption, A process of transforming clear text (data in its original, uncoded form) into ciphertext (encrypted output of a cryptographic algorithm) for security or privacy.

EMAD, Emission Monitoring and Analysis Division of the USEPA.

USEPA, The United States Environmental Protection Agency (USEPA). Established in 1970 by presidential executive order, it brings together parts of various government agencies involved with the control of pollution. Note that some State environmental authorities may be called EPA also, as in Illinois EPA.

FOIA, Freedom of Information Act.

Functional Acknowledgment, A transaction set (997) transmitted by the receiver of an EDI transmission to the sender, indicating receipt and syntactical acceptability of data transmitted according to the ANSI/ASC X12 Standards. The functional acknowledgment allows the receiving party to report back to the sending party problems encountered by the syntax analyzer as the data is interpreted. It is not intended to serve as an acknowledgment of data content.

Functional Group, One or more transaction sets bound together by a functional group header segment and a functional group trailer segment.

Functional Group Control Segments, Group delineated by the functional group header (GS segment) and the functional group trailer (GE segment). GS starts and identifies one or more related transaction sets and provides a control number and application identification information. GE defines the end of the functional group of related transaction sets and provides a count of contained transaction sets.

Guidelines, Instructions on the use of EDI. Guidelines provide additional information about conducting EDI and may provide assistance on how to implement EDI.

Interchange, The actual transfer of data between trading partners.

Interchange Control Envelope, The outer envelope that holds multiple functional group envelopes for transmission. The structure of the envelopes within the Interchange Control Envelope impacts the efficiency of the processing.

Interchange Control Segments, ISA/IEA segments identify a unique interchange being sent from one sender to one receiver.

Interchange Control Structure, The interchange header and trailer segments envelope one or more functional groups or interchange related control segments and perform the following functions: 1) defines the data element separators and the data segment terminators, 2) identifies the sender and receiver, 3) provides control information for the interchange, and 4) allows for authorization and security information. (X12.5).

Loop, A group of semantically related segments; these segments may be either bound together or not.

Loop Repeat, Maximum number of times a specified loop can be used at this location in a transaction set.

Mandatory (M), A data element/segment requirement designator that indicates that the presence of a specified data element is required.

Mapping, The process of identifying the relationship between the data elements in the standard transaction set and the data elements in the application.

Max Use, The maximum number of times a segment can be used at the location in a transaction set.

NAAQS, National Ambient Air Quality Standards.

OAQPS, Office of Air Quality Planning and Standards of the USEPA.

Optional (O), A data element/segment requirement designator that indicates that the presence of a specified data element/segment is at the option of the sending party, which can be based on the mutual agreement of the interchange parties.

Qualifier, A data element that identifies or defines a related element, set of elements, or a segment. The qualifier contains a code taken from a list of approved codes.

Relational Condition (X), A data element requirement designator that indicates that the presence of a specified data element is dependent on the value or presence of other data elements in the segment. The condition must be stated and must be computer processable. The condition may be paired or multiple (P); required (R); exclusion (E); conditional (C); or list conditional (L).

RFP, Reasonable Further Progress is a type of air emission report.

Security, System screening that denies access to unauthorized users and protects data from unauthorized uses.

Segment, Logically related data elements in a defined sequence. A data segment consists of a segment identifier, one or more data elements each preceded by an element separator, and ending with a segment terminator. Each segment shall have a stated purpose, which should be sufficiently generic as to encourage the segment use in other transaction sets.

Segment Directory (X12.22), Provides the purposes and formats of the segments used in the construction of transaction sets. The directory lists each segment by name, purpose, identifier, the contained data elements in the specified order, and the requirement designator for each data element. A segment directory is developed to standardize permissible segments.

Segment Identifier, A unique identifier for a segment composed of a combination of two or three uppercase letters and digits. The segment identifier occupies the first character positions of the segment. The segment identifier is not a data element.

Segment Terminator, A unique character appearing at the end of a segment to indicate the termination of the segment.

SIP, State Inventory Plan is a type of air inventory report.

Standards, The technical documentation approved by ASC X12, including transaction sets, segments, data elements, codes and interchange control structures. Standards provide the structure for ASC X12.

Sub Element Separator, A unique character used to delimit the component data elements within a composite data element.

Syntax, The grammar or rules that define the structure of the EDI standards (i.e., the use of loops, qualifiers, etc.). Syntax rules are published in ANSI X12.6.

Trading Partner, The sending and/or receiving party involved in the exchange of electronic data interchange transmissions.

Trading Partner Agreement (TPA), Serves as the "interface specification" between trading partners and provides specific details of the legal agreements that define how the electronic commerce is to be conducted.

Transaction Set, A semantically meaningful unit of information exchanged between trading partners.

Transaction Set Control Segment, Delineators for the transaction set — transaction set header (ST segment) and the transaction set trailer (SE segment). The header starts and identifies the transaction set. The trailer defines the end of the transaction set and provides a count of the data segments, which includes the ST and SE segments.

Transaction Set ID, An identifier that uniquely identifies the transaction set. This identifier is the value in the first data element of the transaction set header segment.

VAN, Value Added Network. Third-party service organizations.

Version/Release, Identifies the publication of the standard being used for the generation or the interpretation of data in the X12 standard format. May be found in the Functional Group Header Segment (GS) and in the Interchange Control Header Segment (ISA), (e.g., Version 003040 means Version 3 Release 4).

X12, The ANSI committee responsible for the development and maintenance of standards for Electronic Data Interchange (EDI).

X12.5, Interchange Control Structure. This standard provides the interchange envelope of a header and trailer for the electronic interchange through a data transmission, and it provides a structure to acknowledge the receipt and processing of this envelope. X12.5 includes separate segments and data elements not in X12.22 or X12.3.

X12.6, Application Control Structure. This standard describes the control segments used to envelop loops of data segments, to envelop transaction sets, and to envelop groups of related transaction sets.

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SECTION 9 — FORMS AND DOCUMENTS

9.1 ASC X12 Transaction Sets

The EIIP EDI complies with the ASC X12 standards for Electronic Data Interchange for its Program. The EIIP Data Management Committee will support the following ASC X12 transaction sets:

- ISA/IEA, GS/GE, ST/SE Header and Trailer Formats; and
- 841 - Specifications/Technical Information

9.1.1 Header/Trailer Format

The USEPA has defined the element to be used in the Interchange Control Header/Trailer (ISA/IEA), Functional Group Control Header/Trailer (GS/GE), and the Transaction Set Header/Trailer (ST/SE) for all transmissions to and from program trading partners.

The interchange header and trailer segments envelop one or more functional groups or interchange related control segments and perform the following functions:

- Define the data element separators and data segment terminators;
- Identify the sender and receiver;
- Provide control information for the interchange; and
- Allow authorization and security information.

9.1.2 841 Specifications/Technical Information

The 841 Specifications/Technical Information Transaction Set is used to transmit air emission inventory or modeling data. More information regarding the 841 Transaction Set is located in Appendix D.

9.2 ASC X12 Documents

The following ASC X12 documents should be referenced for additional information, standard format, and implementation issues.

ASC X12 Draft Standards, Version 003 Release 060, Document Number ASC X12S/95-533 is available through:

Data Interchange Standards Association, Inc. (DISA)
1800 Diagonal Road, Suite 200
Alexandria, VA 22314-2852
Telephone: (703) 548-7005

Reference to the EIIP Phase I Core Data Model and code lists identified in the convention document are available through:

Ms. Lee Tooly
U.S. Environmental Protection Agency
Emission Factor and Inventory Group
EIIP Data Management Committee
Research Triangle Park, NC 27711
Telephone: (919) 541-5292

9.3 EIIP X12 841 Convention Document Organization and Convention-for-Use

The EIIP EDI prototype project has developed a Convention Document for use with the electronic transfer of air emissions data. The Convention Document follows the standards set by the ANSI/ASC X12 for EDI. The document includes the EIIP's implementation of the ANSI/ASC X12 841 Specifications/Technical Information transaction set.

The ANSI/ASC X12 841 Specifications/Technical Information is a complex transaction set that is based on a design concept that uses hierarchical levels. This type of organization is similar to that commonly used with organizational charts. In this type of scheme, where there is a primary level which has one or more subordinate sub-levels, which in turn may have one or more subordinate sub-levels. This transaction set is based on the same principle.

The following outlines the hierarchical levels defined by the EIIP for use in the prototype EDI:

Header (H) Data that applies to the entire modeling data set. The information includes: confidentiality indicator; inventory type; general notes, comments, and descriptions; data model version; transmission date and time; data collection period; DARS quality rating score for the

transaction set; organization name(s) and location data; and contact information. The standard requires that there only be a single header per transaction set. Therefore, there will only be a single header-level, to which all other levels are subordinate.

Site/Source (4) Data that applies to the site/source for which the data is being reported. The information includes: confidentiality indicator; site identification information; geographic location pointer (actual data collected in the header-level); general message; site/source type; Standard Industry Classification (SIC) code; number of employees; map reference data; and chemical speciation data.

By convention of the EIIP implementation, this level may be used multiple times per transaction set as long as each occurrence shares the same source type. As a result, the site/source-level will always be subordinate to a single header-level, but may have multiple physical-levels subordinate to it.

Physical (5) Data that applies to the physical unit for which the data is being reported. The information includes: confidentiality indicator; physical unit identification information; geographic location pointer (actual data collected in the header-level); general message; physical unit type; emission unit, emission release point, and control equipment information; grid/county area data; physical unit operational status, and emission path data.

By convention of the EIIP implementation, this level may be used multiple times per transaction set. As a result, the physical-level will always be subordinate to a single site/source-level, but may have multiple process-levels subordinate to it.

Process (6) Data that applies to the process for which the data is being reported. The information includes: confidentiality indicator; process identification information; general message; description of materials; emission process information; Source Classification Code (SCC); Standard Industry Classification (SIC) code; process growth factor information; operating schedule; seasonal adjustment factors; and process characteristic information.

By convention of the EIIP implementation, this level may be used multiple times per transaction set. As a result, the process-level will

always be subordinate to a single physical-level, but may have multiple activity-levels subordinate to it.

Activity (C) Data that applies to the activity (throughput) for which the data is being reported. The information includes: confidentiality indicator; activity (throughput) identification information; DARS quality rating score; throughput method code; activity (throughput) schedule; seasonal adjustment factors; meteorological data; and typical day information.

By convention of the EIIP implementation, this level may be used multiple times per transaction set. As a result, the activity-level will always be subordinate to a single process-level, but may have multiple emission-levels subordinate to it.

Emission (9) Data that applies to the emission for which the data is being reported. The information includes: confidentiality indicator; emission-specific pollutant identification; control strategy information; rule effectiveness information; total capture/control efficiency data; rule penetration information; aggregate control efficiency, rule effectiveness, estimated emissions, and emission factors method codes; estimate emissions data; emission factors data; and DARS quality rating score.

By convention of the EIIP implementation, this level may be used multiple times per transaction set. As a result, the emission-level will always be subordinate to a single site/source-level, but as it is the lowest level in the hierarchy, it will never have any subordinate levels.

The hierarchical organization of the Convention Document is illustrated below, including the corresponding X12 code values that they are referenced by.

HEADER

SITE/SOURCE-LEVEL (HL03 = 4)

PHYSICAL-LEVEL (HL03 = 5)

PROCESS-LEVEL (HL03 = 6)

ACTIVITY-LEVEL (HL03 = C)

EMISSION-LEVEL (HL03 = 9)

Each HL segment is comprised of two to four data elements that define it. These data elements identify the individual HL segments and specify the relationships between the individual HL segments. The specific uses of each of the data elements is described below.

HL01 (Hierarchical ID Number) - This data element must contain a unique label for each occurrence of the HL segment in the air emissions modeling transaction. An HL segment is required to define each level in the hierarchial "organization". For example, in a basic modeling data set with three processes being reported for a single physical unit from a single site/source, five occurrences of the HL segment are required: one for the site/source level, one for each physical unit, and one for each physical unit's emission process. By convention, the hierarchical ID number will start with "1" for the first occurrence of the HL segment I the transaction set and increment by one for each occurrence thereafter within the same transaction set. The number will return to "1" for the next transaction set.

HL02 (Hierarchical Parent ID Number) - This data element identifies the Hierarchical ID Number of the HL segment to which it is subordinate. In our example above, the Hierarchical Parent ID Number of each of the process-level occurrences of the HL segment will be "2", identifying the physical-level HL segment. The HL02 value for the physical-level will be "1" as the site/source HL segment is its parent. The value of HL02 for the site/source HL segment will be null because it has no parent HL segment. HL02 is mandatory for all other occurrences of the HL segment.

HL03 (Hierarchical Level Code) - This data element provides the level of detail implied by the series of segments that follow the current HL segment, up to the next occurrence of the HL segment in the transaction set. In other words, the data contained in HL03 indicates the grouping of the information at the current HL-level. For example, if HL03 is "4", it indicates the following segments in that HL-level, form a logical grouping of data relating to site/source-level information. Likewise, if HL03 is "6", it indicates that the following segments are associated with process information.

HL04 (Hierarchical Child Code) - This data element indicates whether there are subordinate (i.e., child) HL segments to the current HL segment. Use of this data element is optional. If used, a value of "0" indicates no subordinate HL segments and value of "1" indicates one or more subordinate HL segments.

The example below illustrates the relationships between the various HL segments as described.

	SITE/SOURCE-LEVEL *(HL01 = 1)* *(HL02 = blank)* *(HL03 = 4)* *(HL04 = 1)*	
	PHYSICAL-LEVEL *(HL01 = 2)* *(HL02 = 1)* *(HL03 = 5)* *(HL04 = 1)*	
PROCESS-LEVEL#1 *(HL01 = 3)* *(HL02 = 2)* *(HL03 = 6)* *(HL04 = 1 if HL follows)*	**PROCESS-LEVEL#2** *(HL01 = 4)* *(HL02 = 2)* *(HL03 = 6)* *(HL04 = 1 if HL follows)*	**PROCESS-LEVEL#3** *(HL01 = 5)* *(HL02 = 2)* *(HL03 = 6)* *(HL04 = 1 if HL follows)*

By convention, for the EIIP prototype project, a transaction set will consist of the data being reported for a single source type (e.g., point, area, nonroad, mobile, and biogenic). A transaction set can not contain data for more than one source type. Within each transaction set, data for multiple sites/sources may be reported. Likewise, multiple sets of physical unit, process, activity, and emission data, may be reported for each site/source.

If data for multiple source types must be reported, they can be submitted in the same transmission as multiple transaction sets can be included in a single transmission. However, as stated above, each source type must be reported as a single transaction set. Refer to Section 10 for more definition of transaction set organization and use.

9.4 Cross Reference Matrix of Phase I Core Data Model vs. Modeling Data Set vs. EIIP X12 841 Convention Document

This table is a cross reference between the EIIP X12 841 Convention Document, the EIIP Phase I Core Data Model, and the modeling data set that is being implemented for the prototype effort. The table displays each data attribute specified in the data model and where the corresponding data element is located in the convention document relative to the data elements that comprise the modeling data set. As such, the cross reference indicates the location of each emissions modeling data element within the convention document. The modeling data elements that are indicated are those that are required for transmission under the prototype EDI activities. The data model entities and attributes are for reference use only.

Appendix C contains the cross reference between the Phase I Core Data Model and the EIIP X12 841 Convention Document. The table shows the location of each data model attribute within the convention document.

Cross Reference Matrix of Phase I Core Data Model vs. Modeling Data Set vs. EIIP X12 841 Convention Document

EIIP Entity	EIIP Attribute	X12 Data Element	Modeling Attribute Name	Comments
Activity/ Schedule	Start Date/Time	Activity (throughput) beginning date and time: DTM02 in LX loop (pos. 551) *and* DTM03 in LX loop *and* DTM05 in LX loop **if** HL03 = 'C' **and** DTM01 in LX loop = '196'	Average Summer Weekday Emissions	
			Annual Emissions	
			Average Summer Weekday Emissions	Each day and pollutant emission have separate instances in the Emissions entity.
			Activity Level	
Activity/ Schedule	Process Rate/ Throughput	Activity (throughput) data: MEA03 in LX loop (pos. 545) **if** HL03 = 'C' **and** MEA01 in LX loop = 'TR'	Fuel Use	
			Activity Level	
Activity/ Schedule	Unit of Measure	Activity (throughput) data: MEA04 [composite] in LX loop (pos. 545) **if** HL03 = 'C'	Activity Level	
Aggregate Controls as Applied	Total Capture/ Control Efficiency	Total capture/control efficiency: MEA03 in CID loop (pos. 741) **if** HL03 = '9' **and** CID04 in detail level = 'CE' **and** MEA01 in CID loop = 'AH'	% Control Efficiency	Each pollutant-specific control efficiency has a separate instance in the Aggregate Controls as Applied entity.
Aggregate Controls as Applied	Rule Effectiveness	Rule effectiveness: MEA03 in CID loop (pos. 741) **if** HL03 = '9' **and** CID04 in detail level = 'CE' **and** MEA01 in CID loop = 'AG'	Rule Effectiveness	

EIIP Entity	EIIP Attribute	X12 Data Element	Modeling Attribute Name	Comments
Aggregate Controls as Applied	Rule Penetration	Rule penetration: MEA03 in CID loop (pos. 741) **if** HL03 = '9' **and** CID04 in detail level = 'CE' **and** MEA01 in CID loop = 'PM'	% Rule Penetration	Each pollutant-specific control efficiency has a separate instance in the Aggregate Controls as Applied entity.
Control Equipment	Percent Control Efficiency	Percent control efficiency: MEA03 in LX loop (pos. 229) **if** HL03 = '5' **and** MEA02 in LX loop = 'COT'	Primary Control Efficiency	
			Primary and Secondary Control Devices (and additional)	Handled as separate instances of the Control Equipment entity and linked through the path entity.
Control Equipment	Device Type	Physical unit code: PID04 in detail level (pos. 187) **if** HL03 = '5' **and** PID02 in detail level = 'PP'	Control Device Code	Assume ECOS 'Control Device Code' is the 'type' of control device, not a unique identifier.
Emission Factors	Numeric Value	Emission factor data: STA02 in CID loop (pos. 751) **if** HL03 = '9' **and** CID04 in detail level = 'EF'	Emission Factor	ECOS specifies the emission factor to be in SCC units. Unit of Measure = SCC Units
			Emission Factor	
			Emission Factor	Each pollutant-specific control efficiency has a separate instance in the Emission Factor entity. Unit of Measure = lbs/ activity unit of measure.
Emission Process	SCC	Source Classification Code (SCC): PID04 in detail level (pos. 345) **if** HL03 = '6' **and** PID02 in detail level = 'SC'	Source Classification Code	

EIIP Entity	EIIP Attribute	X12 Data Element	Modeling Attribute Name	Comments
			Source Classification Code	
Emission Process	Process SIC	Standard Industry Classification Code (SIC) code: REF02 in detail level (pos. 371) **if** HL03 = '6' **and** REF01 in detail level = 'IJ'	Standard Industrial Classification Code	
			Standard Industrial Classification Code	
Emission Process	AMS Code	AIRS Area and Mobile Sources (AMS) code: PID04 in detail level (pos. 345) **if** HL03 = '6' **and** PID02 in detail level = '12'	Area Source Category Code	
Emission Process	Winter Throughput Percentage	Seasonal operational adjustment factor data: STA02 in CID loop (pos. 435) *and* DTM01 in STA loop (pos. 437) indicate winter **if** HL03 = '6' **and** CID04 in detail level = 'A' **and** STA01 in CID loop = 'ZZ'	Winter Throughput %	
			Winter Throughput %	Winter activity may be reported as a percentage of the annual activity.
Emission Process	Spring Throughput Percentage	Seasonal operational adjustment factor data: STA02 in CID loop (pos. 435) *and* DTM01 in STA loop (pos. 437) indicate spring **if** HL03 = '6' **and** CID04 in detail level = 'A' **and** STA01 in CID loop = 'ZZ'	Spring Throughput %	
			Spring Throughput %	Spring activity may be reported as a percentage of the annual activity.
Emission Process	Summer Throughput Percentage	Seasonal operational adjustment factor data: STA02 in CID loop (pos. 435) *and* DTM01 in STA loop (pos. 437) indicate summer **if** HL03 = '6' **and** CID04 in detail level = 'A' **and** STA01 in CID loop = 'ZZ'	Summer Throughput %	
			Summer Throughput %	Summer activity may be reported as a percentage of the annual activity.
Emission Process	Fall Throughput Percentage	Seasonal operational adjustment factor data: STA02 in CID loop (pos. 435) *and* DTM01 in STA loop (pos. 437) indicate fall **if** HL03 = '6' **and** CID04 in detail level = 'A' **and** STA01 in CID loop = 'ZZ'	Fall Throughput %	
			Fall Throughput %	Fall activity may be reported as a percentage of the annual activity.

EIIP Entity	EIIP Attribute	X12 Data Element	Modeling Attribute Name	Comments
Emission Process	Hours Per Day	Operating schedule data: STA03 (C00101) in CID loop (pos. 435) = 'HR' *and* STA03 (C001004) in CID loop = 'DA' *and* STA07 (C00105) in CID loop indicates '-1' **if** HL03 = '6' **and** CID04 in detail level = 'S' **and** STA01 in CID loop = '30'	Hours/day in operation	
			Hours/day in operation	
Emission Process	Days Per Week	Operating schedule data: STA03 (C00101) in CID loop (pos. 435) = 'DA' *and* STA03 (C001004) in CID loop = 'WK' *and* STA07 (C00105) in CID loop indicates '-1' **if** HL03 = '6' **and** CID04 in detail level = 'S' **and** STA01 in CID loop = '30'	Days/week in operation	
			Days/week in operation	
Emission Process	Weeks Per Year	Operating schedule data: STA03 (C00101) in CID loop (pos. 435) = 'WK' *and* STA03 (C001004) in CID loop = 'YR' **if** STA07 (C00105) in CID loop indicates '-1' **if** HL03 = '6' **and** CID04 in detail level = 'S' **and** STA01 in CID loop = '30'	Weeks/year in operation	
			Weeks/year in operation	
Emission Process	Heat Content	Heat content: STA02 in CID loop (pos. 435) **if** HL03 = '6' **and** CID04 in detail level = 'HC' **and** STA01 in CID loop = '34'	Heat Content	
Emission Process	Sulfur Content	Sulfur content: STA02 in CID loop (pos. 435) **if** HL03 = '6' **and** CID04 in detail level = 'SC' **and** STA01 in CID loop = '34'	Sulfur Content	
Emission Process	Ash Content	Ash content: STA02 in CID loop (pos. 435) **if** HL03 = '6' **and** CID04 in detail level = 'AC' **and** STA01 in CID loop = '34'	Ash Content	
Emission Release Point	Federal ID Code	Federal identifier code: SPI03 in detail level (pos. 165) **if** HL03 = '5' **and** SPI02 in detail level = 'PE'	AIRS Stack Number	
Emission Unit/ Physical Unit	Federal ID Code	Federal identifier code: SPI03 in detail level (pos. 165) **if** HL03 = '5' **and** SPI02 in detail level = 'PE'	AIRS Point ID	

EIIP Entity	EIIP Attribute	X12 Data Element	Modeling Attribute Name	Comments
Emission Unit/ Physical Unit	Design Capacity	Design capacity: MEA03 in PID loop (pos. 193) **if** HL03 = '5' **and** MEA01 in PID loop = 'PD' **and** MEA02 in PID loop = 'VOL'	Boiler Design Capacity	
Emissions	Start Date/Time	Activity (throughput) beginning date and time: DTM02 in LX loop (pos. 551) *and* DTM03 in LX loop *and* DTM05 in LX loop **if** HL03 = 'C' **and** DTM01 in LX loop = '196' *Note: Emissions holds a child relationship to the Activity-level which contains these data.*	Year of Inventory	NOTE: Found in: RDT04 (pos. 012) **if** RDT03 = '196'
Emissions	Pollutant Code	CAS number/pollutant: SPI03 in detail level (pos. 639) **if** HL03 = '9' **and** CID04 in detail level = 'ES'	SEROAD Pollutant Code	The DMC discussed SAROAD coding and dropped it from the data model. A Pollutant Code will be used to identify pollutants in the EIIP Data Model. Each pollutant emission (Nox, VOC, CO, SO2, PM-10) has a sEparate instance in the Emissions and Emissions Factors entities.
Emissions	Numeric Value	Pollutant-specific estimated emissions data: STA02 in CID loop (pos. 751) **if** HL03 = '9' **and** CID04 in detail level = 'ES'	Average Summer Weekday Emissions	
			Average Summer Weekday Emissions	Unit of Measure = tons/day
			Annual Emissions	
			Annual Emissions	Unit of Measure = tons/year
			Peak or Hot Summer Day Emissions	

EIIP Entity	EIIP Attribute	X12 Data Element	Modeling Attribute Name	Comments
			Peak or Hot Summer Day Emissions	Unit of Measure = Maximum
			Average Summer Weekday Emissions	
			Average Summer Weekday Emissions	Each day and pollutant emission have separate instances in the Emissions entity. Unit of Measure = tons/day
Emissions	Method Code	Estimated emissions method code: REF02 in STA loop (pos. 755) **if** HL03 = '9' **and** CID04 in detail level = 'ES' **and** REF01 in STA loop = 'C3'	Estimation Method	
Geographic Coordinates	UTM Zone	Universal transverse mercator - zone: REF04 (C04006) in LX loop (pos. 079) **if** REF01 in LX loop = '6E' **and** REF02 in LX loop = '05' **and** REF04 (C04005) in LX loop = 'XW'	UTM Zone	
Geographic Coordinates	X Coordinate	Latitude: REF04 (C04004) in LX loop (pos. 079) **if** REF01 in LX loop = '6E' **and** REF02 in LX loop = '05' **and** REF04 (C04003) in LX loop = 'LQ'	Longitude or UTM Easting	
Geographic Coordinates	Y Coordinate	Longitude: REF04 (C04002) in LX loop (pos. 079) **if** REF01 in LX loop = '6E' **and** REF02 in LX loop = '05' **and** REF04 (C04001) in LX loop = 'LK'	Latitude or UTM Northing	
Geographic Location	State/Province/ Territory (FIPS)	State or province: N402 in header level (pos. 054)	State FIPS Code	
			State FIPS Code	
			State FIPS Code	
Geographic Location	County/Parish/ Reservation (FIPS)	County/parish code: REF02 in header level N1 loop (pos. 057) **if** REF01 in header level N1 loop = 'ZX'	County FIPS Code	
			County FIPS Code	

EIIP Entity	EIIP Attribute	X12 Data Element	Modeling Attribute Name	Comments
			County FIPS Code	
Geographic Location	Municipality	Municipality: N102 in header level (pos. 045) **if** N101 in header level = 'C6'	City FIPS Code	
Process Growth Factors	Initial Year	Process growth factors start year: DTM07 in LX loop (pos. 393) **if** HL03 = '6' **and** DTM01 in LX loop = '196' **and** DTM06 in LX loop = 'CY'	Annual Average Growth Rate (%)	
Process Growth Factors	Projected Year	Process growth factors projected action end date: DTM07 in LX loop (pos. 393) **if** HL03 = '6' **and** DTM01 in LX loop = '575' **and** DTM06 in LX loop = 'CY'	Annual Average Growth Rate (%)	
Process Growth Factors	Growth Factor	Process growth factor data: MEA03 in LX loop (pos. 387) **if** HL03 = '6' **and** MEA01 in LX loop = 'AG' **and**	Annual Average Growth Rate (%)	
Process Growth Factors	Growth Factor Reference	Process growth factor reference text: REF03 in LX loop (pos. 395) **if** HL03 = '6' **and** REF01 in LX loop = 'ZZ'	Origin of Growth Rate	(BEA, EGAS, Local, etc.)
Process Growth Factors	Growth Factor Units	Process growth factor data: MEA04 (C00101) in LX loop (pos. 387) **if** HL03 = '6' **and** MEA01 in LX loop = 'AG'	Annual Average Growth Rate (%)	
Site/Source	Site Name	Name: N102 in SPI loop (pos. 019) **if** HL03 = '4' **and** N101 in SPI loop = '7C'	Plant Name	
Site/Source	Physical Address	Address information: N301 in header level (pos. 051) *and* N302 in header level **if** HL03 = '4' **and** N101 in SPI loop = '7C' **and** N103 in SPI loop = '93' **and** N104 in SPI loop = N104 in header level **and** N103 in header level = '93' **and** N101 in header level = '7C'	Plant Street Address	
Site/Source	SIC	Standard Industry Classification (SIC) code: REF02 in detail level (pos. 055) **if** HL03 = '4' **and** REF01 in detail level = 'IJ'	Standard Industrial Classification Code	

EIIP Entity	EIIP Attribute	X12 Data Element	Modeling Attribute Name	Comments
Site/Source	Federal ID Code	Federal key identifier code: SPI03 in detail level (pos. 007) **if** HL03 = '4' **and** SPI02 in detail level = 'IJ'	AIRS Plant ID	
Site/Source	Physical Zip Code	Postal code: N403 in header level (pos. 054) **if** HL03 = '4' **and** N101 in SPI loop = '7C' **and** N103 in SPI loop = '93' **and** N104 in SPI loop = N104 in header level **and** N103 in header level = '93' **and** N101 in header level = '7C'	The actual, physical ZIP code of the source	
Stack Physical Parameter	Stack Height	Height above ground: MEA03 in PID loop (pos. 193) **if** HL03 = '5' **and** MEA01 in PID loop = 'PD' **and** MEA02 in PID loop = '5F'	Stack Height	
Stack Physical Parameter	Stack Diameter	Inside diameter: MEA03 in PID loop (pos. 193) **if** HL03 = '5' **and** MEA01 in PID loop = 'PD' **and** MEA02 in PID loop = 'ID'	Stack Diameter	
Stack Physical Parameter	Exit Gas Temperature	Exit gas temperature: MEA03 in PID loop (pos. 193) **if** HL03 = '5' **and** MEA01 in PID loop = 'TE'	Stack Exit Temperature	
Stack Physical Parameter	Exit Gas Velocity	Exit gas velocity: MEA03 in PID loop (pos. 193) **if** HL03 = '5' **and** MEA01 in PID loop = 'PD' **and** MEA02 in PID loop = 'ZZZ'	Stack Exit Velocity	
Stack Physical Parameter	Exit Gas Flow Rate	Flow rate: MEA03 in PID loop (pos. 193) **if** HL03 = '5' **and** MEA01 in PID loop = 'PD' **and** MEA02 in PID loop = 'FR'	Stack Exit Flow Rate	
Stack Physical Parameter	Plume Height	Plume height data: MEA03 in PID loop (pos. 193) **if** HL03 = '5' **and** MEA01 in PID loop = 'BA'	Plume Height	

9.5 EIIP Code Tables Contained in the EIIP X12 841 Convention Document

There are three types of code lists employed in the EIIP X12 841 Convention Document. There are codes that are used as data element qualifiers. These codes are

part of and defined by ANSI/ASC X12. The code values have been developed for use with all ANSI/ASC X12 standards and are maintained by the committee.

The second type of code list consists of those codes that are used by the EIIP by reference (e.g., Standard Industry Classification (SIC) code, Dun & Bradstreet number, Chemical Abstract Service (CAS) Registry Number, etc.). These codes are used by the air emission programs implementing the Convention Document, but are maintained by a specific outside organization (not ANSI/ASC X12). Therefore, the values for these codes would be obtained from the responsible organizations.

The final type of code list, the type contained in this table, are those that are developed by the EIIP and are physically contained in the Convention Document. These are codes are not related to the ANSI/ASC X12 standards and are not administered by outside organizations. They are identified and used to meet specific air emission inventory/modeling needs. These codes are maintained by, and can be obtained from, the EIIP.

This table presents the EIIP code lists as they are used in the Convention Document. Within the ANSI/ASC X12 standards, each code (identified as "ID") has a preceding qualifier. This qualifier indicates the type/source of the code. For example, the source type of Point Source (code 01) is qualified by Source Type (code 06). Both the code and its related qualifier are detailed in this table. Additionally, the data element number, as specified in the standard, and the position location are included to ensure accurate reference. As the other types of codes are administered by other organizations and clearly referenced within the Convention Document, they are not detailed in this table.

Note: Code IDs indicated in parentheses are the values found in this version of the Convention Document that must be changed due to conflict with other code values. The Code IDs preceding them, although not found in the document, should be applied in their place

EIIP Code Tables Contained in the EIIP X12 841 Convention Document

Position Reference	Qualifier Element	Qualifier ID	Data Element	Code ID	Code Definition
header - 009	128	17	127	01	Level 1 (EIIP Phase I)
				02	Level 2 (EIIP Phase II)
				03	Level 3 (EIIP Phase III)

Position Reference	Qualifier Element	Qualifier ID	Data Element	Code ID	Code Definition
header - 009	128	17	791	EMIS	Annual stationary major source inventory data submittal
				EPA	USEPA required data submittal
				EPARFP	Reasonable Further Progress(RFP) inventory data
				EPASIP	Base year State Implementation Plan(SIP) inventory data submittal
				LOC	Data submittal between local and state agency
				NON	Nonattainment modeling data submittal
				PLAN	Planning inventory (e.g., seasonal) data submittal
				REGION	Regional area modeling data submittal
				SPEC	Special data submittal
				SUBNON	Sub-nonattainment area modeling data submittal
				SUPER	Super-regional area modeling data submittal
header - 054	309	RG	310	03MOD	Ozone Moderate
				03OTR	Ozone Transport Region
				CO	Carbon Monoxide
				03EXT	Ozone extreme
				03MAR	Ozone marginal
				03SER	Ozone serious
				03SEV1	Ozone severe 1
				03SEV2	Ozone severe 2
				03UNC	Ozone unclassified
				PM10	Particulate Matter 10
				PM25	Particulate Matter 2.5
header - 057	128	6E	127	01	Static Grid
				02	Line
				03	Point
				04	Polygon

Position Reference	Qualifier Element	Qualifier ID	Data Element	Code ID	Code Definition
detail - 055	128	06	127	01	Point Source
				02	Area Source
				03	Mobile Source
				04	Biogenic Source
				05	Nonroad Engines and Vehicles Source
detail - 055	128	T7	127	GEO	Geogenic
				LIGHT	Lightning
				SOIL	Soil
				VEG	Vegetation
detail - 079	128	6E	127	05	Dynamic Grid
				06	Projection System Name
detail -093	559	EP	751	MONO	Monoterpines
				OVOC	Other Volatile Organic Compounds
				VOC	Volatile Organic Compounds
detail - 187	750	PP	751	01	Stack
				02	Control Unit
				03	Emission Unit
				04	Storage Tank
				05	Vehicle Group
				06	Process
				07	Flare
				08	Equipment Leak Fugitives
				09	Loading
				10	Cooling Towers
				11	Incinerators
				12	Accidental Release/Upset
				13	Start up/Shut Down
				14	Wastewater
				15	Area
				16	Other

Position Reference	Qualifier Element	Qualifier ID	Data Element	Code ID	Code Definition
detail - 225	235	ZZ	234	CO	Carbon monoxide
				HC	Hydrocarbons
				ISO	Isoprene
				MONO	Monoterpines
				NMHC	Nonmethane hydrocarbons
				NMOC	Nonmethane organic compounds
				NMOG	Nonmethane organic gases
				NO	Nitric oxide
				NOX	Nitrogen oxides
				NOY	Nitrogen oxides plus secondary compounds
				OVOC	Other volatile organic compounds
				PB	Lead
				PM	Particulate matter
				PM10	Particulate matter >= 10
				PM25	Particulate matter >= 2.5
				ROG	Reactive organic gases
				SOX	Sulfer oxides
				TOG	Total organic gases
				VOC	Volitile organic compounds
detail - 237	128	ZZ	127	A	Operating
				B	Under Construction
				C	Under Modification
				D	Mothballed
				E	Closed - Dismantled/Removed From Site
				F	Closed - Remaining On Site
detail - 409	559	EP	751	AC	Ash Content
				HC	Heat Content
				OF (A)	Seasonal Operating Adjustment Factor
				OS (S)	Operating Schedule

Position Reference	Qualifier Element	Qualifier ID	Data Element	Code ID	Code Definition
				SC	Sulfer Content
				T	Maximum Actual Throughput
detail - 439 and detail - 597	128	72	127	01	Ozone Season
				02	Peak Ozone Season
				03	CO Season
				04	Peak CO Season
				05	Particulate Matter Season
				06	Modeling Episode
detail - 439 and detail - 553	128	PG	127	ABR	Abrasive
				ABSP	ABS Polymer
				ACEAL	Acetaldehyde
				ACID	Acid
				ACIDFN	Acid Final
				ACIDPR	Acid Pure
				ACRNL	Acrylonitrile
				ACROL	Acrolein
				ADH	Adhesive
				ADN	ADN
				ADPN	Adipronitrile
				AGNT	Agent
				ALLY	Alloy
				ALMA	Alumina
				ALMO	Aluminum Molten
				AMM	Ammonia
				ANILN	Aniline
				ASB	Asbestos
				ASP	Asphalt
				ASPSL	Asphalt Shingle

Position Reference	Qualifier Element	Qualifier ID	Data Element	Code ID	Code Definition
				BATT	Batteries
				BAUX	Bauxite
				BEAN	Beans
				BEANGR	Beans Green
				BEETRW	Beets Raw
				BNZN	Benzene
				BOD	Bodies
				BORD	Board
				BRED	Bread
				BRIK	Brick
				BUTDN	Butadiene
				BUTDN13	1.3-Butadiene
				CAD	Cadmium
				CAN	Cans
				CAPLM	Caprolactam
				CAR	Car(s)
				CARTOT	Cargo Total
				CAST	Castings
				CATL	Catalyst
				CBLK	Carbon Black
				CC14	CC14
				CEM	Cement
				CFC133	CFC-133
				CHAR	Charcoal
				CHRMORE	Chromite Ore
				CHXN	Cyclohexene
				CIG	Cigarettes
				CL	Chlorine
				CLAY	Clay
				CLBNZ	Chlorobenzene(s)

Position Reference	Qualifier Element	Qualifier ID	Data Element	Code ID	Code Definition
				CLFRM	Chloroform
				CLMET	Chloromethane(s)
				CLNK	Clinker
				CLOT	Clothes
				COAL	Coal
				COALSTG	Coal Storage
				COAT	Coating
				COKE	Coke
				COKEFR	Coke Free
				COKERW	Coke Raw
				CON	Concrete
				COPLY	Copolymer
				CORE	Cores
				COREOL	Core Oil
				COTT	Cotton
				COW	Cattle
				CTET	Carbon Tetrachloride
				CU	Copper
				CULL	Cullet
				CUM	Cumene
				CURR	Current
				CUSC	Copper Scrap
				DBZF	Dibenzofuran
				DCB	1,4-Dichlorobenzene
				DCE	1,2-Dichloroethane
				DIST	Distance
				DMF	DMF
				DMTP	Dimethyl Terephthalate
				DRAN	Drains
				DRUM	Drums

Position Reference	Qualifier Element	Qualifier ID	Data Element	Code ID	Code Definition
				EAFDT	EFA Dust
				EDC	EDC
				EDCVC	EDC-VC
				ELEC	Electricity
				ELECRD	Electrode
				ENER	Energy
				EPCH	Epichlorohydrin
				ETCSOL	Etching Solution
				ETH	Ethylene
				ETHBNZ	Ethylbenzene
				ETHBST	Ethylbenzene/Styrene
				ETHCL	Ethyl Chloride
				ETHDB	Ethylene Dibromide
				ETHDC	Ethylene Dichloride
				ETHOX	Ethylene Oxide
				EXP	Exposed
				EXTFC	Extractor Feed Cake
				FABR	Fabric
				FDNHCO	Feed NaHCO3 Dry
				FEED	Feed
				FEEDDR	Feed Dry
				FEEDFR	Feed Fresh
				FEEDMT	Feed Material
				FELTST	Felt Saturated
				FERT	Fertilizer
				FIBR	Fiber
				FISH	Fish
				FISHML	Fish Meal
				FISHRW	Fish Raw
				FISHSC	Fish Scrap

Position Reference	Qualifier Element	Qualifier ID	Data Element	Code ID	Code Definition
				FLC1112	Florocarbon 11/12
				FLC22	Florocarbon 22
				FLSP	Fluorspar
				FORM	Formaldehyde
				FORM37	37% Formaldehyde
				FRMGS	Ferromanganese
				FRSH	Fresh
				FUEL	Fuel
				GAS	Gas
				GLSS	Glass
				GLSSBD	Glass Beaded
				GLYET	Glycol Ethers
				GRAD	Graders
				GRIT	Grit
				GRN	Grain
				GYPCR	Gypsum Crude
				HAMB	Hamburger
				HCL	Hydrochloric Acid
				HEATIN	Heat Input
				HXCBNZ	Hexachlorobenzene
				HYC	Hydrocarbons Total
				INK	Ink
				IRON	Iron
				LAB	LAB
				LEAD	Lead
				LEADOX	Lead Oxide
				LIME	Lime
				LIMHYD	Lime Hydrated
				LIMSTN	Limestone
				LOG	Logs

Position Reference	Qualifier Element	Qualifier ID	Data Element	Code ID	Code Definition
				MATL	Material
				MATLRW	Material Raw
				MCBNZ	Monochlorobenzene
				MEAL	Meal
				MEAT	Meat
				MERC	Mercury
				METL	Metal
				METLHT	Metal Hot
				METLSPR	Metal Sprayed
				MLCAHD	Meleic Anhydride
				MTHCFRM	Methyl Chloroform
				MTHCHL	Methylene Chloride
				MTHCLFR	Methylene Chloride Fresh
				NAPT	Naphthalene
				NEOP	Neoprene
				NICK	Nickel
				NITELST	Nitrile Elastomer
				NTRBZN	Nitrobenzene
				OCRSL	O-Cresol
				OIL	Oil
				ORE	Ore
				ORECON	Ore Concentrated
				OVRBUR	Overburden
				P205	P205
				PAINT	Paint
				PAPR	Paper
				PCB	PCB
				PCE	PCE
				PCECC	PCE & CC14
				PCETCE	PCE & TCE

Position Reference	Qualifier Element	Qualifier ID	Data Element	Code ID	Code Definition
				PCETH	Perchloroethlyene
				PCETHFR	Perchloroethlyene Fresh
				PCPHNL	Pentachlorophenol
				PELLT	Pellets
				PEST	Pesticide
				PHNL	Phenol
				PHSGN	Phosgene
				PHSPH	Phosphate
				PHSPHRK	Phosphate Rock
				PHSPRS	Phosphorous
				PIGIRN	Pig Iron
				PIGMNT	Pigment
				PILE	Pile
				PIPE	Pipe
				PIPECST	Pipe Cast
				PLCANHD	Phthalic Anhydride
				PLSTC	Plastic
				PLYWD38	Plywood 3/8 Inch
				PM	PM
				POLVNL	Polyvinal
				POLY	Polymer
				POM	POM
				PROD	Product
				PRODDR	Product Dry
				PRODFN	Product Finished
				PRODSA	Product Surface Area
				PRPLYN	Proplyene
				PULP	Pulp
				PULPABD	Pulp Air-Dried Bleached
				PULPADU	Pulp Air-Dried Unbleached

Position Reference	Qualifier Element	Qualifier ID	Data Element	Code ID	Code Definition
				RAYN	Rayon
				REF	Refinery
				RESD	Residues/Skimmings
				RESN	Resin
				RESNPA	Resin Polyester/Alkyd
				RESNTN	Resin Thinned
				ROCK	Rock
				SALT	Salt
				SAND	Sand
				SAWDST	Sawdust
				SBR	SBR
				SCMNGS	Silicomanganese
				SCRP	Scrap
				SCRPRS	Scrapers
				SEAL	Seals
				SHOT	Shot
				SINT	Sinter
				SLAG	Slag
				SLBLKL	Solids Black Liquor
				SLDG	Sludge
				SLDGDR	Sludge Dried
				SOLNCT	Solution Coating
				SOLNFRM	Solution 37% Formaldehyde
				SOLV	Solvent
				SOLVCT	Solvent Coating
				SOLVFR	Solvent Fresh
				SOLVIN	Solvent in Ink
				SOLVMU	Solvent Make-Up
				SOLVRC	Solvent Reclaimed
				SOLVTN	Solvent Thinned

Position Reference	Qualifier Element	Qualifier ID	Data Element	Code ID	Code Definition
				SOUR	Sour Gas
				STEL	Steel
				STELSP	Steel Specialty
				STM	Steam
				STON	Stone
				STOR	Storage
				STRCH	Starch
				STYR	Styrene
				SULF	Sulfer 100%
				SULFAC	Sulfuric Acid
				SUMP	Sump
				SURF	Surface
				TCBZN	1,2,4-Trichlorobenzene
				TECLN	Trichloroethylene
				TECLNFR	Trichloroethylene Fresh
				TCEN	1,1,1-Trichlorothane
				TDI	TDI
				TETHLD	Tetraethyl Lead
				TIRE	Tires
				TNT	TNT
				TOLN	Toluene
				TONE	Toner
				TOPSL	Topsoil
				TPLCAC	Terephthalic Acid Crude
				TRCKHL	Trucks Haul
				UREA	Urea
				VAC	Vacuum
				VEHCL	Vehicles Light/Medium
				VNLC	Vinyl Chloride
				VNLCM	Vinyl Chloride Monomer

Position Reference	Qualifier Element	Qualifier ID	Data Element	Code ID	Code Definition
				VNLDC	Vinyldiene Chloride
				WATCO	Water Cooling
				WAX	Wax
				WFR	Wafers/Chips
				WFRBRD	Waferboard
				WOOD	Wood
				WOODDF	Wood Dry Flakes
				WOODDR	Wood Dried
				WSTE	Waste
				WSTWTR	Wastewater
				XLN	Xylene(s)
				XLNM	m-Xylene
				XLNO	o-Xylene
				XLNT	Xylene(s) Total
				ZINC	Zinc
				ZINCOX	Zinc Oxide
detail - 439 and detail - 553	128	SU	127	ADD	Added
				APPL	Applied
				AREA	Area
				BAKE	Baked
				BLOW	Blown
				BURN	Burned
				CAP	Capicity
				CAST	Cast
				CHAR	Charbroiled
				CHRG	Charge(d)
				CLND	Cleaned
				COAT	Coated
				CONS	Consumed

Position Reference	Qualifier Element	Qualifier ID	Data Element	Code ID	Code Definition
				CRSH	Crushed
				DGRS	Degreased
				DRIL	Drilled
				DRY	Dried
				EMIT	Emitted
				FEDD	Fed into Dryer
				FEED	Feed
				GIN	Ginned
				GRAN	Granulated
				HAND	Handled
				IAD	In Adhesive Applied
				ICT	In Coating
				IINF	In Influent
				IINK	In Ink
				INOC	Inoculated
				INPT	Input
				IOPP	In Operation
				LEAK	Leaked
				LIQK	Liquified
				LOAD	Loaded
				MELT	Melted
				MILL	Milled
				MINE	Mined
				MIX	Mixed
				OPRG	Operating
				PICK	Picked
				PLAT	Plated
				PRDT	Product
				PROC	Processed
				PROD	Produced

Position Reference	Qualifier Element	Qualifier ID	Data Element	Code ID	Code Definition
				PRODCAP	Production Capacity
				PUMP	Pumped
				RECD	Received
				REDU	Reduced
				REMD	Removed
				ROAS	Roasted
				SAW	Sawed
				SHIP	Shipped
				SHPRCD	Shipped or Received
				SMOK	Smoked
				SPUN	Spun
				STOR	Storage
				STRP	Stripped
				TRFD	Transferred
				THRU	Throughput
				TPRT	Transported
				TRAV	Traveled
				TRTD	Treated
				UNLD	Unloaded
				USED	Used
detail - 553	128	IX	127	01	Calculated based on physical principles
				02	Estimated based on expert judgement
				03	Calculated based on manufacturer-specified throughput capacity
				04	Calculated based on direct continuous measurement of an activity surrogate
				05	Calculated based on direct intermittent measurement of an activity
				06	New construction, not yet operational. Emissions are zero.
				07	Operations ceased. Emissions are zero.
				08	Calculated based on modeling activity

Position Reference	Qualifier Element	Qualifier ID	Data Element	Code ID	Code Definition
				09	Derived from Highway Performance Monitoring System (HPMS) data
				10	Derived from census data
				11	Derived from trade association/industry group data
				12	State agency generated data
				13	Local agency generated data
				14	Federal agency generated data
				15	Proprietary database
				16	Based on survey results
				17	Calculated based on statistical method
detail - 567	559	EP	751	AF (A)	Season Adjustment (Throughput) Adjustment Factor
				AS (S)	Activity (Throughput) Schedule
				M	Meteorological
detail - 595	1250	UN	1251	01	
				02	
				03	
				04	
				05	
				06	
				07	
detail - 639	128	I9	127	CO	Carbon Monoxide
				HC	Hydrocarbons
				ISO	Isoprene
				MONO	Monoterpines
				NMHC	Nonmethane hydrocarbons
				NMOC	Nonmethane organic compounds
				NMOG	Nonmethane organic gases
				NO	Nitric oxide
				NOX	Nitrogen oxides

Position Reference	Qualifier Element	Qualifier ID	Data Element	Code ID	Code Definition
				NOY	Nitrogen oxides plus secondary compounds
				OVOC	Other volatile organic compounds
				PB	Lead
				PM	Particulate matter
				PM10	Particulate matter >= 10
				PM25	Particulate matter >= 2.5
				ROG	Reactive organic gases
				SOX	Sulfer oxides
				TOG	Total organic gases
				VOC	Volatile organic compounds
detail - 661	559	EP	751	04	Site/Source
				05	Physical
				06	Process
detail - 725	559	EP	751	CE	Aggregate Control Information
				EF	Emission Factor
				ES	Estimated Emissions
detail - 729	559	EP	751	C	Controlled
				U	Uncontrolled
detail - 745	128	ZZ	127	AA (A)	Area Source Questionnaire
				CC (C)	Direct Calculation of emissions by solvent use, all solvents emitted in time period
				DD (D)	80% - Default value
				EE (E)	Source in compliance due to irreversible process that eliminates solvent use
				HH (H)	90% - Default - enhance monitoring
				LL (L)	Local category-specific rule effectiveness factor - not USEPA regulated
				MM (M)	Continuous emission factor
				NN (N)	Source not subject to regulation
				PP (P)	Point Source Questionnaire

Position Reference	Qualifier Element	Qualifier ID	Data Element	Code ID	Code Definition
				SS (S)	USEPA Single Source Category Determination Protocol Study
				UU (U)	Uncontrolled emission
detail - 745 and detail - 755	128	C3	127	01	Calculated based on source test or other emission measurement
				02	Calculated based on material balance using engineering knowledge of the process
				03	Calculated based on best guess/engineering judgement
				04	Calculated based on vendor emission factor specification
				05	Calculated based on ratio in order to measure pollutant
				06	Calculated based on pilot bench study
				07	State Stack Test
				08	State Material Balance
				09	State Efficiency of Control Device
				10	Company Material Balance
				11	Company Efficiency of Control Device
				12	Continuous Emission Monitoring
detail - 755	128	6E	127	13	Calculated based on AP-42 emission factor
				14	Calculated based on state/local emission factor
				15	New construction, not yet operational - emissions are zero
				16	Operations ceased - emissions are zero
				17	Calculated based on FIRE emission factor
				18	Calculated based on user-supplied emission factor
				19	Calculated based on USEPA specification factor
				20	Calculated based on state/local Specification factor

Position Reference	Qualifier Element	Qualifier ID	Data Element	Code ID	Code Definition
				21	Calculated based on trade association emission factor
				22	CO Stack Test Approved by State
				23	Other CO Stack Test Approved by State
				24	State Factor Used by State
				25	State VOC Calculation
				26	Company SCC Factor
				27	Company VOC Calculation
				28	Other miscellaneous emission method code
detail - 755	128	D0	127	A	AIRS Rating A
				B	AIRS Rating B
				C	AIRS Rating C
				D	AIRS Rating D
				E	AIRS Rating E
				F	AIRS Rating F

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SECTION 10 — AGENCY CONVENTIONS, INTERCHANGE CONTROL & TRANSACTION SETS

10.1 Introduction

Section 10 contains the descriptions of the information used in the Interchange Header (ISA), Interchange Trailer (IEA), Group Start (GS), Group End (GE), and the control segments.

To help understand how the standards work, it is useful to begin by defining some terminology and explaining some of the components that make electronic communications possible. It is important to note that in the transaction set implementation guidelines all text shown in italics is an EIIP convention. Non-italicized text contain definitions and comments directly from the X12 standards.

A "*transaction set*" is the term used in business data interchange to describe the electronic transmission of a single document (purchase order, Emission Statement, shipping notice, etc.) between one organization's computer and the computer of the other trading partner. The data included in a transaction set conveys the same information as a conventional printed document.

A *transaction set* generally but not always, consists of three areas - Header or Table 1, Detail or Table 2, and a Summary or Table 3. The *Header Area* contains information that is of an administrative nature and pertains to the entire document (document dates, identities, names of contacts, etc.). The *Detail Area* is used to convey the actual business transaction such as quantities, prices, items. Data in the Detail Area overrides equivalent Header Area data (i.e. if a contact is specified in the Header and another contact is specified with a single item, the second contact takes priority). The *Summary Area* contains control information and may contain other data that relates to the entire transaction.

Transaction sets are a collection of a series of segments. A *segment* is a group of data used to convey a logical grouping of data. The data within a segment are contained within data elements.

Please note that in the design of Composite Data Elements, sub-elements are still referred to as elements.

EDI transmissions are created from information extracted from internal information systems, translated into ASC X12 format and punctuated with control characters. Quantity, unit of measure, unit price, catalogue number is typical purchase order or

invoice information. In an invoice transaction the information becomes a segment of five data elements grouped in a specific sequence as follows:

IT1 Quantity*Unit of Measure Code*Unit Price** Product Service Qualifier*Product/Service Identification N/L**

The ANSI/ASC X12 format requires each element be separated by an element separator and the last element be followed by a segment terminator. Graphic representations of the control characters usually use the asterisk as a element separator, N/L as the segment terminator and a colon(:) as a sub-element separator.

The segment in an actual transmission would appear as:

IT11*CA*1.08**CT*141151 N/L**

In the ANSI/ASC X12 code list "CA" is the unit of measure code for case, and "CT is the product identification qualifier for carton.

The following list identifies terms associated with data segments and provides references to codes and terms used in the X12 standard. The actual transmission does not include all of the listed items as only the segment identifier characters, the values for each data element, the data element separators and the segment terminator characters are transmitted.

Segment Identifier, Two or three characters assigned to identify the segment. The identifier occupies the first character positions of the segment.

Data Element Reference Number, A number assigned to the data element to provide a reference to the ASC X12 Data Dictionary which defines specifications for each data element.

Data Element Reference Designator, A structured code assigned to each data element in a segment to indicate its unique position in the segment. It is composed of the segment identifier and its sequential position within the segment.

Data Element Name, This is the name assigned to the data element in the ASC X12 Data Dictionary.

Attributes, Each data element has three ASC X12 attributes: element usage or Condition Designator, data element type, and Minimum/Maximum length.

Condition Designator

M - Mandatory
The element is required to appear in the segment.

O - Optional
Appearance of the data element is at the option of the sending party or is based on the mutual agreement of the trading partners.

X - Relational
Condition that may exist between two or more data elements based on the presence or absence of one of the data elements. Additional codes are used to identify the condition i.e. P - Paired or Multiple, R - Required, E - Exclusion, C - Conditional, or L - list Conditional. Refer to the X12 Standards Manual, Introduction to X12.22 Segment Directory.

Data Element Type

ID Identifier
The data element must always contain a value from a predefined list of values that is maintained by X12 or by other bodies that are recognized by X12 and identified by reference in Appendix A in the Data Element Dictionary. The value is left justified. Trailing spaces should be suppressed.

AN String
Alpha-numeric sequence of characters containing at least one non-space character. The significant characters must be left justified. Leading spaces, if used are assumed to be significant characters. Trailing spaces should be suppressed.

FS Fixed Length String
A sequence of any letters, spaces, and/or special characters with spaces filled, if necessary, to satisfy minimum length.

DT Date
The format is CCYYMMDD where CC is hundred year, YY is the Year, MM is the month and DD is the day of the month.

TM Time

Values for a time-type data element are in the HHMMSSd..d format expressed using the 24-hour clock. HH expresses the hour (00-23), MM expresses the minute (00-59), SS the seconds (00-59), and d..d is the numeric expression of decimal seconds.

Nn Numeric
Numeric data element where N indicates a numeric and "n" indicates the decimal places to the right of a fixed, implied decimal point. The decimal point is not transmitted in the character stream. If the max length of the data element was five position and the Type was N2, the values sent would always have two decimal positions; an N0 would contain no decimal positions.

R Decimal
A numeric data element where the decimal point is optional for integer values, but required for fractional values. Leading zeros should be suppressed unless necessary to satisfy a minimum length requirement. The decimal point and the minus sign when transmitted are not counted when determining the length of the data element value. If the max length of the data element was three positions, the following represent the values that could be sent: NNN, .NNN, N.NN, NN.N, -N.NN, etc.

B Binary
Any sequence of octets ranging in value from binary 00000000 to binary 11111111. Binary may only exist in the BIN Segment.

Minimum/Maximum, This is the range, minimum to maximum, of the number of character positions available to represent the data element value. It may be of variable length with a minimum to maximum, or it may be of fixed length in which the minimum is equal to the maximum.

10.2 X12 EDI Transmission Control Structure

The X12 Transmission is a hierarchical structure of headers and trailers to allow transaction sets of different types to be transmitted in the same transmission and allows the data to be separated or segregated logically for easy interpretation and internal routing by the receiver.

Transaction sets begin with an ST segment and end with an SE segment. Multiple transaction sets of the same functional group are transmitted together beginning such a group with a GS (Group Start) and ending with a GE (Group End) segment. One or more functional groups are bound together for transmission within an interchange envelope that starts with an ISA segment and ends with an IEA segment. There are other segments available for Security and Interconnect control when using the services of third party communications providers (e.g., VAN).

The *interchange control structure* is the interchange envelope consisting of a Header (ISA) and a Trailer (IEA) for the electronic interchange through a data transmission, and provides a structure to acknowledge the receipt and processing of the envelope.

The ISA and the IEA envelope one or more functional groups or interchange-related control segments and perform the following functions:

- Define the segment terminator, and the element and sub-element separators;
- Identify the sender and receiver;
- Provide control information for the interchange; and
- Allow for authorization and security information.

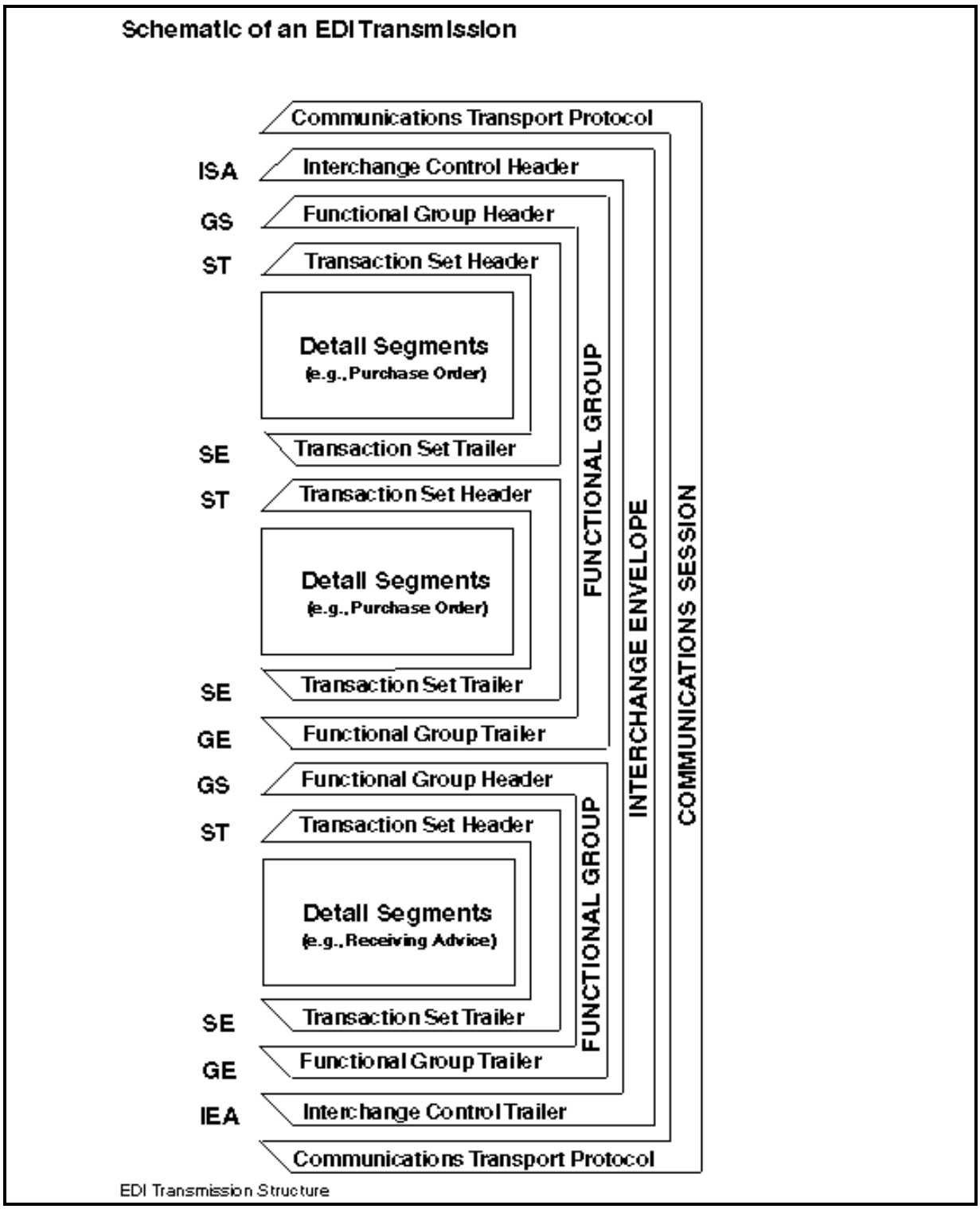
The GS and GE envelope transactions sets of the same type. Each type of transaction is contained in a separate Functional Group to allow the receiver to parse the information to the appropriate application. The GS segment provides the identity of the Version and Release of the standard used to create the transaction. Both the GS and the GE provide control information to ensure the validity of the interchange.

Every transaction set begins with an ST (Transaction Start) segment and is ended with a GE (Group End) segment.

Translators normally strip off the ISA/IEA and GS/GE segments during translation. It is the responsibility of the trading partners to make provisions to archive the transmissions before and after translation to satisfy EDI Audit Requirements.

The structures of the transaction set and functional group headers and trailers are found in the Segment Directory. The structures of the interchange control header and trailer are found in the Interchange Control Structure Standard (ANSI/ASC X12.5-1989).

See the following EDI Transmission schematic. The schematic illustrates a typical format for electronically transmitting a series of diverse business transactions.


Schematic of an EDI Transmission
Communications Transport Protocol
ISA
Interchange Control Header
GS
Functional Group Header
ST
Transaction Set Header
Detail Segments
(e.g., Purchase Order)
SE
Transaction Set Trailer
ST
Transaction Set Header
Detail Segments
(e.g., Purchase Order)
SE
Transaction Set Trailer
GE
Functional Group Trailer
GS
Functional Group Header
ST
Transaction Set Header
Detail Segments
(e.g., Receiving Advice)
SE
Transaction Set Trailer
GE
Functional Group Trailer
IEA
Interchange Control Trailer
Communications Transport Protocol
FUNCTIONAL GROUP
FUNCTIONAL GROUP
INTERCHANGE ENVELOPE
COMMUNICATIONS SESSION
EDI Transmission Structure

10.2.1 Control Segments

ICS Interchange Control Structures

Functional Group ID=

Introduction:

The purpose of this standard is to define the control structures for the electronic interchange of one or more encoded business transactions including the EDI (Electronic Data Interchange) encoded transactions of Accredited Standards Committee X12. This standard provides the interchange envelope of a header and trailer for the electronic interchange through a data transmission, and it provides a structure to acknowledge the receipt and processing of this envelope.

Notes:

The functional group is not an interchange component of this standard but appears here to establish positioning for the functional groups.

The following symbols are found in the convention:
>> indicates a required element
X indicates an element not used

Notes and Comments	Pos. No.	Seg. ID	Name	Req. Des.	Max.Use	Loop Repeat
	010	ISA	Interchange Control Header	M	1	
Not Used	020	TA1	Interchange Acknowledgment	O	1	
	030	GS	Functional Group Header	O	1	
	040	GE	Functional Group Trailer	O	1	
	050	IEA	Interchange Control Trailer	M	1	

Segment: **ISA** **Interchange Control Header**
Position: 010
Loop:
Level:
Usage: Mandatory
Max Use: 1
Purpose: To start and identify an interchange of zero or more functional groups and interchange-related control segments
Syntax Notes:
Semantic Notes:
Comments:
Notes: The value of the data element separator, the sub-element separator, and the segment terminator for all the segments following the ISA that begins the transmission through the IEA that completes the transmission are established in the ISA. Byte 4, following the three bytes that comprise the "ISA" identification of this header, is used to separate the remaining elements in this and all succeeding data elements through the end of the IEA. This implementation guide uses the asterisk (*) as the graphic representation of the data element separator. The sub-element separator is established in data element I15. It is also the sub-element separator through the end of the IEA. This implementation guideline uses the colon (:) as the graphic representation of the sub-element separator. The value at the last position of the ISA establishes the segment terminator for the communication through the end of the IEA. The ISA consists of fixed length fields, therefore the segment terminator is byte 106 or the first byte after data element ISA16.

The control characters selected as the segment separator, sub-element separators and the segment terminators must be characters that will not be data characters within the communication. Acceptable characters, in hexadecimal notation are HEX 04, HEX 0D, HEX 4F, HEX 1C, or HEX 15.

Example:
ISA*00*xxxxxxxxxx*00*xxxxxxxxxx*01*123456789xxxxxx*90*057949910002Pxx*950704*2300*U*00304*000000789*0*P*:N/L

Data Element Summary

	Ref. Des.	Data Element	Name	Attributes
>>	**ISA01**	**I01**	**Authorization Information Qualifier** Code to identify the type of information in the Authorization Information 00 No Authorization Information Present (No Meaningful Information in I02) 03 Additional Data Identification	**M ID 2/2**
>>	**ISA02**	**I02**	**Authorization Information**	**M AN 10/10**

Information used for additional identification or authorization of the interchange sender or the data in the interchange; the type of information is set by the Authorization Information Qualifier (I01)

This element is fixed field length. It must be space filled.

>>	**ISA03**	**I03**	**Security Information Qualifier**	**M**	**ID**	**2/2**

Code to identify the type of information in the Security Information

00	No Security Information Present (No Meaningful Information in I04)

>>	**ISA04**	**I04**	**Security Information**	**M**	**AN**	**10/10**

This is used for identifying the security information about the interchange sender or the data in the interchange; the type of information is set by the Security Information Qualifier (I03)

This element is fixed length. It must be space filled.

>>	**ISA05**	**I05**	**Interchange ID Qualifier**	**M**	**ID**	**2/2**

Qualifier to designate the system/method of code structure used to designate the sender or receiver ID element being qualified

01	Duns (Dun & Bradstreet)

>>	**ISA06**	**I06**	**Interchange Sender ID**	**M**	**AN**	**15/15**

Identification code published by the sender for other parties to use as the receiver ID to route data to them; the sender always codes this value in the sender ID element

>>	**ISA07**	**I05**	**Interchange ID Qualifier**	**M**	**ID**	**2/2**

Qualifier to designate the system/method of code structure used to designate the sender or receiver ID element being qualified

01	Duns (Dun & Bradstreet)

>>	**ISA08**	**I07**	**Interchange Receiver ID**	**M**	**AN**	**15/15**

Identification code published by the receiver of the data; When sending, it is used by the sender as their sending ID, thus other parties sending to them will use this as a receiving ID to route data to them

>>	**ISA09**	**I08**	**Interchange Date**	**M**	**DT**	**6/6**

Date of the interchange

>>	**ISA10**	**I09**	**Interchange Time**	**M**	**TM**	**4/4**

Time of the interchange

>>	**ISA11**	**I10**	**Interchange Control Standards Identifier**	**M**	**ID**	**1/1**

Code to identify the agency responsible for the control standard used by the message that is enclosed by the interchange header and trailer

U	U.S. EDI Community of ASC X12, TDCC, and UCS

>>	**ISA12**	**I11**	**Interchange Control Version Number**	**M**	**ID**	**5/5**

This version number covers the interchange control segments

It does not establish the Version/Release for the transactions which follow. That Version/Release is established by the GS (Functional Group Header) preceding the transactions.

00401	Draft Standard for Trial Use Approved for Publication by ASC X12 Procedures Review Board.

>>	**ISA13**	**I12**	**Interchange Control Number**	**M**	**N0**	**9/9**

A control number assigned by the interchange sender

Together with the sender ID it uniquely identifies the interchange data to the receiver. It is suggested that the sender, receiver, and all third parties be able to maintain an audit trail or interchanges using this number. The number is suggested to start with 000000001 and be incremented by 1 for each subsequent ISA between the sender and receiver. It must match the number in IEA02.

>>	**ISA14**	**I13**	**Acknowledgment Requested**	**M**	**ID**	**1/1**

Code sent by the sender to request an interchange acknowledgment (TA1)

1	Interchange Acknowledgment Requested

>>	**ISA15**	**I14**	**Test Indicator**	**M**	**ID**	**1/1**

Code to indicate whether data enclosed by this interchange envelope is test or production

P	Production Data
T	Test Data

>>	**ISA16**	**I15**	**Component Element Separator**	**M**	**AN**	**1/1**

This field provides the delimiter used to separate component data elements within a composite data structure; this value must be different than the data element separator and the segment terminator

ISA16 is followed by a character that will establish the segment terminator for the communication through the end of the IEA. Refer to the notes at the beginning of this segment.

Segment: **GS** **Functional Group Header**
Position: 030
Loop:
Level:
Usage: Optional
Max Use: 1
Purpose: To indicate the beginning of a functional group and to provide control information
Syntax Notes:
Semantic Notes:
Comments:
Notes: The GS segment establishes the Version/Release for the transaction sets between it and the GE (Group End) segment.

Example: GS*123456789*873186902*19940115*2300*1*X*003041 N/L

Data Element Summary

	Ref. Des.	Data Element	Name	Attr		
>>	**GS01**	**479**	**Functional Identifier Code** Code identifying a group of application related transaction sets FA Functional Acknowledgment (997) SP Specifications/Technical Information (841)	**M**	**ID**	**2/2**
>>	**GS02**	**142**	**Application Sender's Code** Code identifying party sending transmission; codes agreed to by trading partners	**M**	**AN**	**2/15**
>>	**GS03**	**124**	**Application Receiver's Code** Code identifying party receiving transmission. Codes agreed to by trading partners	**M**	**AN**	**2/15**
>>	**GS04**	**373**	**Date** Date (CCYYMMDD) Date sender generated a functional group of transaction sets.	**M**	**DT**	**6/6**
>>	**GS05**	**337**	**Time** Time expressed in 24-hour clock time as follows: HHMM, or HHMMSS, or HHMMSSD, or HHMMSSDD, where H = hours (00-23), M = minutes (00-59), S = integer seconds (00-59) and DD = decimal seconds; decimal seconds are expressed as follows: D = tenths (0-9) and DD = hundredths (00-99) Time (HHMM) when the sender generated a functional group of transaction sets (local time at sender's location).	**M**	**TM**	**4/6**
>>	**GS06**	**28**	**Group Control Number**	**M**	**N0**	**1/9**

Assigned number originated and maintained by the sender

Start with 000000001 and increment by 1 for each subsequent GS in the communication. This is an assigned number originated and maintained by the sender.

>>	**GS07**	**455**	**Responsible Agency Code**	**M**	**ID**	**½**

Code used in conjunction with Data Element 480 to identify the issuer of the standard

X	Accredited Standards Committee X12

>>	**GS08**	**480**	**Version / Release / Industry Identifier Code**	**M**	**AN**	**1/12**

Code indicating the version, release, subrelease, and industry identifier of the EDI standard being used, including the GS and GE segments; if code in DE455 in GS segment is X, then in DE 480 positions 1-3 are the version number; positions 4-6 are the release and subrelease, level of the version; and positions 7-12 are the industry or trade association identifiers (optionally assigned by user); if code in DE455 in GS segment is T, then other formats are allowed

The release used for the EIIP is 003060.

003060	Draft Standards Approved for Publication by ASC X12 Procedures Review Board

Segment: **GE** **Functional Group Trailer**
Position: 040
Loop:
Level:
Usage: Optional
Max Use: 1
Purpose: To indicate the end of a functional group and to provide control information
Syntax Notes:
Semantic Notes:
Comments:
Notes: Example: GE*9*1 N/L

Data Element Summary

	Ref. Des.	Data Element	Name	Attr		ibutes
>>	**GE01**	**97**	**Number of Transaction Sets Included** Total number of transaction sets included in the functional group or interchange (transmission) group terminated by the trailer containing this data element	**M**	**N0**	**1/6**
>>	**GE02**	**28**	**Group Control Number** Assigned number originated and maintained by the sender	**M**	**N0**	**1/9**

Segment: **IEA** **Interchange Control Trailer**
Position: 050
Loop:
Level:
Usage: Mandatory
Max Use: 1
Purpose: To define the end of an interchange of zero or more functional groups and interchange-related control segments
Syntax Notes:
Semantic Notes:
Comments:
Notes: Example: IEA*000000789 N/L

Data Element Summary

	Ref. Des.	Data Element	Name	Attr		ibutes
>>	**IEA01**	**I16**	**Number of Included Functional Groups** A count of the number of functional groups included in an interchange	**M**	**N0**	**1/5**
>>	**IEA02**	**I12**	**Interchange Control Number** A control number assigned by the interchange sender Together with the sender ID, it uniquely identifies the interchange data to the receiver. It is suggested that the sender, receiver, and all third parties be able to maintain an audit trail of interchanges using this number. This number must agree with the number in ISA12.	**M**	**N0**	**9/9**

APPENDIX A — GETTING STARTED WITH EDI

(Check List)

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How To Get Started With Electronic Data Interchange (EDI)

This is a check list for implementing EDI for the Emission Inventory Improvement Program EDI prototype project. Although it is intended for use with the prototype efforts, the content is geared toward a pilot environment. As a result some information provided may not be necessary for prototype performance. EDI is the computer-to-computer (application-to-application) interchange of pre-designated message types in standardized formats. The purpose of the EIIP EDI prototype project is to address the task of electronically transferring air emission modeling data between interested parties.

Check List for Prototype Participants

1. Start Up

   Contact the EIIP DMC to get materials and set up a schedule. Materials include the EIIP EDI Implementation Guideline and information about EDI software.

2. Orientation Meeting/Communication

   Meet/communicate with the EDI coordinator for an orientation of the project activities. The meeting will give an overview of EDI and specific instructions on how to obtain and use the materials provided.

3. Equipment Setup

   To operate the EDI translator system being used for the prototype efforts (Supply Tech's STX PC-based translation software), it is recommended that your microcomputer have the following configuration:

   80386 PC-compatible
   16 or 20 MHZ processor
   150 K conventional and 1.012 extended available RAM
   60-80 Megabyte Hard Drive
   PC-DOS or MS-DOS, version 3.3 or higher
   EGA video adapter card with EGA monitor
   Asynchronous or bisynchronous modem *(if applied)*
   132-column printer

In addition, you must have access to a data line *(if applied)*. Most EDI systems are stand-alone, but the software may be configured to run on a Local Area Network (LAN) and use LAN modems.

4. Installation

   Install software and test communication facilities *(if applied)*. The EDI coordinator will provide assistance if needed.

5. Test Transmissions

   Enter and transmit several emission modeling transactions to assure that the process works correctly.

6. Operations Mode

   Once you are assured that the transmissions are reliable, begin to send real air emission modeling data to your trading partner. The USEPA will maintain a database of air emission modeling data. All regulatory reporting that is currently performed in a hard copy format must continue as required..

7. Evaluation

   Evaluate the effort for reliability, data accuracy and time savings.

Check List for USEPA Program Offices

1. Feasibility Analysis

   Initial analysis is important to the success of the EDI implementation. The following issues should be considered before starting the implementation.

   - Funding
   - Level of interest in the reporting community
   - Regulatory language - determine legal applicability of electronic submission

- Information systems support - determine effort needed to manage emission modeling data. Identify the applicable in-house applications and develop an interface to the EDI translation software. If no system already exists, consider building or buying software to manage the data.

2. Select Prototype Participants

   Identify good candidates for prototype participation. The EDI coordinator can contact them and introduce them to the prototype.

3. Set up EDI Hardware and Software

   The EDI coordinator will provide and set up the EDI software, establish a communication service *(if applied)*, and provide technical support for the Program Office. This may require some coordination with internal information systems. The Regional or State Program Office should have access to a microcomputer, and become familiar with using the EDI software.

4. EDI Orientation

   Each prototype participant should attend an orientation meeting to introduce them to the technology and give them specific instructions for using the prototype system. The EDI coordinator will conduct the meeting.

5. Test Reception

   The EDI coordinator will test your EDI system by receiving several emission modeling transmissions from the same or another system. Transmissions must be received reliably before the pilot participants start transmitting.

6. Organize Air Emission Modeling Data

   Become familiar with a tool for managing emission modeling data. This is software developed in-house, purchased, or provided by the EDI coordinator. Make sure you can at least add, remove, find and view emission modeling records from the database.

7. Schedule Participants

   The EDI coordinator will setup a schedule with the pilot participants. For each pilot participant, schedule a time to:

- Do a test transmission
- Begin sending "live" transmissions

8. Receive Test Air Emission Modeling Data

   The EDI coordinator will assist each prototype participant in setting up and testing their EDI system. Once a prototype sight has EDI equipment set up and configured, they should create several “dummy” transmissions and attempt to send them via EDI. At the receiving end, these test transmissions can be received and verified.

9. Receive Operational Air Emission Modeling Data

   Once a prototype participant's system is set up and tested, they may begin to send real emission modeling data. At this point, it is unnecessary for both the trading partner and States to be in contact during the routine transmissions.

10. Evaluation

    Evaluate the process of electronic submission for reliability, data accuracy and time savings.

APPENDIX B — EPA'S GENERIC TERMS AND CONDITIONS AGREEMENT

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This appendix is the generic EPA Terms and Conditions Agreement for the use of EDI for Environmental Reporting. It is an excerpt from the September 4, 1996 Federal Register Notice, Volume 61, Number 172, FRL-5601-4.

Notice of Agency's General Policy for Accepting Filing of Environmental Reports via Electronic Data Interchange (EDI)

AGENCY: Environmental Protection Agency.

ACTION: Interim final notice.

II. TEXT OF EPA GENERIC TERMS AND CONDITIONS AGREEMENTS MODEL

Scope:

Use of this generic Terms and Conditions Agreement (TCA) model applies when EPA requires certification and/or authentication by the Submitter of a report. Where neither certification or authentication is required but use of a TCA is desired by EPA, the Agency may modify this TCA to eliminate unnecessary paragraphs. The model TCA is designed to promote consistency in implementing EDI by Program Offices within the Agency.

Model:

EPA Generic Terms and Conditions Agreement (TCA) Model for Submission of Environmental Reports via Electronic Data Interchange (EDI)

THIS ELECTRONIC DATA INTERCHANGE TERMS AND CONDITIONS AGREEMENT (the “Agreement”), by and between the United States Environmental Protection Agency (“EPA”), 401 M St., SW, Washington, D.C., a federal governmental agency, and reporting party (“Submitter”) who has signed and returned the Terms and Conditions Agreement (TCA) Memorandum, included in today's notice referenced above, is effective on the date on which EPA issues the initial PIN(s), in response to receipt and acceptance of Submitter's signed TCA Memorandum. (When a program is not using a PIN system, some other determinant for the effective date will be specified in the program-specific notice.) Or, in the case where PIN is not required, as otherwise noted in the program-specific notice.

1. Recitals.

The intent of this agreement is to create legally binding obligations upon the parties using EDI and to ensure that (a) use of any electronic functional equivalent of documents referenced or exchanged under this agreement shall be deemed an acceptable practice in the ordinary course of Submitter-to-EPA environmental reporting and (b) such electronic records shall be admissible as evidence on the same basis as paper documents. The parties intend to be legally bound by them.

2. Validity and Enforceability.

2.1 This Agreement has been executed by the parties to evidence their mutual intent to create binding regulatory reporting documents using electronic transmission and receipt of such records.

2.2 Any records properly communicated pursuant to this Agreement shall be considered to be a "writing" or "in writing"; and any such records which contain or to which there is affixed, a Signature, as defined by para. 6 of this Agreement, ("Signed Documents") shall be deemed for all purposes (a) to have been "signed" and (b) to constitute an "original" when printed from electronic files or records established and maintained in the normal course of business.

2.3 The conduct of the parties pursuant to this Agreement, including the use of Signed Records properly communicated pursuant to the Agreement, shall, for all legal purposes, evidence a course of dealing and a course of performance accepted by the parties in furtherance of this Agreement.

2.4 The Submitter agrees not to contest the validity or enforceability of Signed Documents under the provisions of any applicable law relating to whether certain agreements are to be in writing or signed by the party to be bound thereby. Signed Documents, if introduced as evidence on paper in any judicial, arbitration, mediation or administrative proceedings, will be admissible as between the parties to the same extent and under the same conditions as other business records originated and maintained in documentary form. Neither party shall contest the admissibility of copies of the Signed Documents under the Federal Rules of Evidence as inadmissible or in violation of either the business records exception of the rule on hearsay, or the best evidence rule, or on the basis that the Signed Documents were not originated or maintained in documentary (paper) form.

3. Receipt.

A Document shall be deemed to have been properly received by EPA when it is accessible to EPA, can be fully processed by the translator at EPA's Receipt Computer, and is syntactically correct to applicable EDI standards. No Document shall satisfy any reporting requirement or be of any legal effect until it is received.

4. Verification.

Upon receipt of any Document, the receiving party shall promptly and properly transmit a functional acknowledgment in return within “x” business day of receipt to verify that the Document has been received. If a positive functional acknowledgment is not received in return for a Document, the party initially transmitting the Document shall be responsible for re-sending the Document. The number of days shall depend on specific program needs and will be specified in the Program-Specific Notice or related documents (e.g., Implementation Guideline, TCA).

5. Date of Receipt.

EPA will consider an electronically filed report received when it can be fully processed by the translator at the EPA's receipt computer, i.e., when the document is retrievable from the electronic mailbox by EPA, syntactically conforms to applicable EDI standards, and is able to be successfully translated by EPA. A positive functional acknowledgment indicating no syntactical errors will constitute conclusive evidence that EPA has properly received a report and will establish the “Received Date”.

6. Re-transmission.

If the Submitter does not receive a functional acknowledgment promptly after its transmission to the EPA, then the Submitter must re-send the document and follow any recovery procedures stated in the applicable EPA EDI Implementation Guidelines. “Promptly” shall be determined by each program-specific EDI application and defined in the program-specific notice or related documents (e.g., Implementation Guideline, TCA). The Submitter must retransmit any document within “X” days of receiving a re-transmission request by EPA. Likewise, EPA will re-send any transmission originated by EPA at the Submitter's request. The number of days shall depend on specific program needs and will be specified in the Program-Specific Notice or related documents (e.g., Implementation Guideline, TCA).

7. Inability to Transmit.

Circumstances, both foreseeable and unforeseeable, may prevent a reporting party from conducting EDI. Nevertheless, no Submitter will be excused from the requirement to file reports with the Agency by the appropriate regulatory deadline. If a party is unable to electronically file a required report by such deadline, it must submit a paper report on forms required by the applicable regulation.

8. Signature.

The Submitter shall adopt as its signature an electronic identification consisting of symbols (i.e., the Personal Identification Number (PIN) which is affixed to or contained in each Document transmitted by the Submitter ("Signature"). The Submitter agrees that any such Signature affixed to or contained in any transmitted Document shall be sufficient to verify such party originated and possessed the requisite authority both to originate the transaction and to verify the accuracy of the content of the document at the time of transmittal. Unless otherwise specified in the TCA, affixing the Personal Identification Number (PIN) issued to the Submitter by EPA to any transmitted Document constitutes a valid Signature. The Submitter expressly agrees that it will sign each and every report it submits by using its PIN(s) (or other electronic identification, if provided for in the TCA), and that the use of the PIN(s) (or other electronic identification, if provided for in the TCA) constitutes certification of the truth and accuracy, upon penalty of perjury (or other program specific requirement), of the information contained in each such report.

9. Definitions.

Whenever used in this Agreement or any documents incorporated into this Agreement by reference, the following terms shall be defined as follows:

9.1 Compromise. When the PIN is intentionally or unintentionally disclosed to individuals and organizations who are not authorized to know or use the PIN.

9.2 Data. Facts or descriptions of facts.

9.3 Document/Record. Information that is inscribed on a tangible medium or that is stored in an electronic or other medium and is retrievable in perceivable form.

9.4 Electronic Agent. A computer program designed, selected or programmed by a party to initiate or respond to electronic messages or performances without review by an individual. An electronic agent acts within the scope of its agency if its performance is consistent with the functions intended by the party who utilizes the electronic agent.

9.5 Electronic Message/Transaction. A record generated or communicated by electronic, optical or other analogous means for transmission from one information system to another. The term includes electronic data interchange and electronic mail.

9.6 Functional Acknowledgment. Is the sending of a 997 transaction set (under ANSI ASC X12 Standards) indicating the results of the translator's syntactical analysis of the electronically submitted file. A positive acknowledgment indicates that the syntax of the submitted file conforms to the standard and can be processed by the translator. A negative acknowledgment indicates nonconformance to the standards.

9.7 Guidelines. Federal Register Notice and EPA Implementation Guidelines.

9.8 Message. Data structured in accordance with the protocol specified in the Guidelines and transmitted electronically between the parties and relating to a Transaction.

9.9 Personal Identification Number (PIN). Assigned by EPA, each PIN will consist of a sequence of alpha-numeric characters.

9.10. Receive/Receipt. To take delivery of a record or information. An electronic record or information is received when it enters an information processing system in a form capable of being processed by that system if the recipient has designated that information system for the purpose of receiving such records or information.

9.11 Date of Receipt. EPA will consider an electronically filed report received when it is accessible to the receiver (i.e., EPA) at its receipt computer. Upon receipt of any report, EPA will promptly submit a functional acknowledgment in return. A positive functional acknowledgment indicating no syntactical errors will constitute conclusive evidence that EPA has properly received a report and will establish the “Received Date”. No document shall satisfy any reporting requirement until it is received.

9.12 Report. The report required by _____ (Program-specific notice will insert applicable regulatory/statutory cite for program-specific report).

9.13 Signed. For the purposes of EDI, a transaction is “signed” if it includes a symbol and/or action that is adopted or performed by a party or its electronic agent with the present intent to authenticate or manifest assent to a record, a performance, or a message. Actions or symbols adopted or performed by an electronic agent serve to authenticate with present intent a record or message on behalf of a party if the party designed, programmed or selected the electronic agent with an intent that the agent produce the result and the electronic agent performs in a manner consistent with its intended programming. That a record or message is signed is conclusively presumed as a matter of law if the parties agreed to an authentication procedure and the symbol or action taken complies with that procedure. Otherwise, that a document is signed may be proved in any manner including by a showing that a procedure existed by which a party must of necessity have taken an action or executed a symbol in order to have proceeded further in the use or processing of the information.

9.14 Transaction. Any communication made or transaction carried out and identified as the communication or transaction to which a Message refers including but not limited to the filing of a specific report.

9.15 Transmission Log. Must be retained by all parties using EDI for reporting purposes. The Transmission Log includes the date, time, destination address and telephone number, and a copy of the file transmitted; it also documents the persons who had access to the Submitter's system during the creation of the files and during their transmission. The Submitter shall create an official Transmission Log of all transactions and maintain it without any modification. Each Submitter shall designate one or more qualified individuals with appropriate authority to certify the accuracy and completeness of the Transmission Log and this designation shall be retained as part of the records. Each Submitter shall also maintain records concerning the assignment and revocation of PINs, as discussed elsewhere in this notice.

9.16 Transaction set. (Cite for specific program).

9.17 User Manual. (Cite, if any).

9.18 Writing. Any document properly transmitted pursuant to this Agreement shall be considered to be a “writing” or “in writing”. For the purpose of interpreting

federal statutes, “writing” is defined to include ‘printing and typewriting and reproductions of visual symbols by photographing, multi graphing, mimeographing, manifolding, or otherwise’. Although the terms of contracts formed using EDI are stored in a different manner than those of paper and ink contracts, they ultimately take the form of visual symbols . . . . it is sensible to interpret federal law in a manner to accommodate technological advancements . . . . It is evident that EDI technology had not been conceived nor, probably, was even anticipated at the times section 1501 and the statutory definition of “writing” were enacted. Nevertheless, we conclude that, given the legislative history of section 1501 and the expansive definition of writing, section 1501 and 1 U.S.C. Section 1 encompass EDI technology." U.S. Comptroller General decision, “Use of Electronic Data Interchange Technology to Create Valid Obligations,” File: B-245714 (13 December 1991).

9.19 Other Definitions. (As required, additional Definitions may be included in Program-specific TCAs.)

10. EDI Transaction Parameters.

Each party may electronically transmit to or receive from the other party any of the transaction sets listed in the Appendix and transaction sets which by agreement are added to the Appendix (collectively referred to as “Documents” or “Reports”). All Documents/Reports shall be transmitted in accordance with the standards set forth herein and in the Appendix. Appendix(es) are hereby incorporated herein by reference. Any transmission of data which is not a Document/Report (i.e., which is not one of the specified transaction sets) shall have no force or effect between the parties.

10.1 Implementation Guidelines. All Documents/Reports transmitted between the parties shall strictly adhere to published Accredited Standards Committee (ASC) X12 standards for Electronic Data Interchange (EDI) and shall comply with data conventions and implementation guidelines set forth in this Agreement and Federal Register notice (“Guidelines”) and all modifications of the Guidelines.

10.2 Modifications of Standards. Whenever EPA intends to upgrade to a new version and release of the ASC X12 standard or modify the Guidelines, EPA shall give notice of its intent and shall establish a conversion date. The Submitter shall have a minimum of sixty (60) days from the conversion date to upgrade to the new standard. EPA can discontinue support of the previous standard no sooner than ninety (90) days after the conversion date. These

dates may vary with specific program requirements. These dates may vary with specific program requirements.

11. System and Operation Expenses.

Each party, at its own expense, shall provide and maintain the equipment, software, services and testing necessary to effectively and reliably transmit and receive Documents.

12. Security.

The parties shall take reasonable actions to implement and maintain security procedures necessary to ensure the protection of transmissions against the risk of unauthorized access, alteration, loss or destruction including, but not limited to those set forth (in Appendix A, in guidelines set forth in F.R., etc.).

12.1 Creation of PIN. Where EPA requires certification to insure the authenticity of electronically submitted documents, EPA will generally require the Submitter to use a PIN assigned by EPA. If EPA agrees to enter into a trading partner relationship with a Submitter, EPA will assign PIN(s) upon receipt and receipt by EPA of the Submitter's signed TCA. EPA will mail the PIN(s) directly to each authorized representative(s) identified in the PIN request. The Agency will issue a new PIN at the written request, on company letterhead, of a responsible corporate officer of the submitter. In addition, EPA will change PINs where Submitters undergo personnel changes that affect the identity of their authorized representatives, or where there is evidence of compromise. Depending on the reporting cycle, EPA will then cancel such authorized representative's individual PIN before the next reporting cycle to which the PIN applies, or no later than fourteen (14) business days of receiving such notice, whichever comes first.

12.2 Protection of PIN. Each party must protect the security of its PIN(s) from compromise and shall take all necessary steps to prevent its loss, disclosure, modification, or unauthorized use. The Submitter shall notify EPA immediately if it has reason to believe the security of any PIN(s) has been compromised and must request a change. If EPA has reason to believe that PIN security has been compromised, the Agency will consult with the Submitter and initiate PIN changes where necessary. Also, the Submitter is responsible for immediately notifying EPA (in writing and on company letterhead and signed by an authorized corporate officer) of termination of employment, or reassignment,

of any authorized representative, and of any new or newly assigned employee(s) who will act as authorized representative(s).

12.3 Access Control. (If required, additional program-specific measures to control access to the transmitted files.)

12.4 Confidentiality. (If Applicable, program-specific clause.) The submitter may claim as confidential information submitted to EPA pursuant to this agreement. In order to assert a claim of confidentiality, the Submitter must mark the response CONFIDENTIAL BUSINESS INFORMATION or with a similar designation, and must clearly specify which information in the Document is so claimed. (The program may wish to insert here specific instructions for asserting confidentiality claims for electronic submissions.) Information so designated will be disclosed by EPA only to the extent allowed by, and by means of, the procedures set forth in, 40 CFR Part 2. If the Submitter fails to claim the information as confidential in accordance with the provisions of this paragraph, 10.4, the information may be available to the public without further notice.

12.5 Other Specific Security Requirements. (If required, other program-specific measures.)

13. Misdirected and Corrupted Transmissions.

If EPA has reason to believe that a Message is not intended for EPA or is corrupted, EPA shall notify the Submitter and shall delete from EPA's system the information contained in such Message (where allowed by applicable law) but not the record of its receipt. Where there is evidence that a Message has been corrupted or if any Message is identified or capable of being identified as incorrect, EPA shall notify the Submitter and it shall be re-transmitted by the Submitter as soon as practicable with a clear indication that it is a corrected Message. (Dependent on circumstances, corresponding requirement may be needed if EPA will be sending messages.)

14. Communications Connections.

Unless otherwise stipulated in program-specific notice, documents shall be transmitted electronically to each party through a third party service provider (“Provider”), designated in the program-specific Implementation Guidelines, who shall be considered the designated provider. The Submitter may transmit through EPA's designated Provider or through a third party service provider of

their choice. In either case, the Submitter assumes all risks associated with their interaction with third party service providers. Upon written consent of EPA, at Submitter's own expense and at sender's own risk, documents may be electronically transmitted to EPA directly. EPA will specify procedures for doing so. Upon thirty days advance notice EPA may change its third party service providers.

14.1 Third-Party Service Provider Fees. (Apportionment of the following fees: (could be incorporated by reference from guidelines, appendix etc.)) EPA does not foresee clause 12.1 being included in it's TCA during the Interim Policy Phase and is uncertain if such provisions will be included in future TCAs.

14.2 Third-Party Service Provider Liability Apportionment. Each party shall be responsible for ensuring the correctness of its transmission except as otherwise provided in this Agreement.

14.3 Records Transmitted Through Provider. The parties agree that either of them may have access to Providers' copies of the records, at the expense of the requesting party.

15. Record Retention and Storage.

15.1 Transmission Log. The Transmission Log shall be maintained by the Submitter without any modification for as long as required for the paper record (Specific program must insert applicable regulations). The Submitter shall designate one or more individuals with appropriate authority to certify the accuracy and completeness of the Transmission Log.

15.2 Record Retention. Nothing herein is intended to release the Submitter from or waive any requirement of law applicable to the Submitter pertaining to record or document retention, or to create new or additional requirements for retention of records or documents except as specifically noted herein or in the Appendix(es). Sender shall retain all records, regardless of the medium on which they are recorded, used in the derivation of the Documents/Reports or information therein transmitted pursuant to this Agreement for the period which would be required for functionally equivalent paper records.

16. Conflicting Terms and Conditions.

This Agreement and all appendices attached constitute the entire agreement between the parties. As the parties develop additional capabilities respecting EDI, additional addenda may be added to this Agreement. EPA will publish notice of new Addenda appending this Agreement and their effective date in the Federal Register. Upon the effective date, each Addendum shall be appended to this Agreement. If the Submitter does not agree to specified changes in the terms and conditions of this Agreement, as provided in the newly published Addenda, the Submitter must notify EPA in accordance with paragraph 15 below. In the absence of such notification, each addendum shall be appended to this Agreement and the date published in the Federal Register notice shall be the effective date.

17. Termination.

This Agreement shall remain in effect until terminated by either party with not less than 30 days prior written notice, which notice shall specify the effective date of termination; provided, however, that any termination shall not affect the respective obligations or rights of the parties arising under any Documents or otherwise under this Agreement prior to the effective date of termination. Termination of this Agreement shall not affect any action required to complete or implement Messages which are sent prior to such termination. Emergency temporary termination of computer connections may be made to protect data from illegal access or other incidental damage.

18. Survivability.

Notwithstanding termination for any reason, Clauses #2 (Validity and Enforceability), #10 (Security), #13 (Record Retention and Storage), #21 (Governing Law), #22 (Choice of Language), and #23 (Dispute Resolution) shall survive termination of this Agreement.

19. Assignability.

This Agreement is for the benefit of, and shall be binding upon, the Submitter and their respective successors and assigns.

20. Severability.

Any provision of this Agreement which is determined to be invalid or unenforceable will be ineffective to the extent of such determination without

invalidating the remaining provisions of this Agreement or affecting the validity or enforceability of such remaining provisions.

21. Notice.

All notices or other forms of notification, request or instruction required to be given by a party to any other party under paragraphs 10, 14, and 15 of this Agreement shall be delivered by hand, or sent by first class post or other recognized carrier to the address of the addressee as set out in this Agreement or to such other address as the addressee may from time to time have notified for the purpose of this clause, or sent by electronic means of message transmission producing hard copy read-out including telex and facsimile, or published in the Federal Register notice, and shall be deemed to have been received:

- if sent by electronic means: at the time of transmission if transmitted during business hours of the receiving instrument and if not during business hours, one hour after the commencement of the next working day following the day transmission;

- if sent by first-class post or recognized carrier: 3 business days after posting exclusive of the day of posting;

- if delivered by hand: on the day of delivery.

Notwithstanding the above, EPA may at its discretion provide notices under paragraphs 7.2, 13, and 17 of this Agreement via publication in the Federal Register. Notice shall be deemed to be received on the day of publication of the Federal Register notice.

Notice address for EPA follows: USEPA, _____.

22. Inability to File Reports via EDI.

No party shall be liable for any failure to perform its obligations in connection with any EDI Transaction or any EDI Document, where such failure results from any act or cause beyond such party's control which prevents such party from transmitting or receiving any Documents via EDI, except that the Submitter is nonetheless required to submit records or information required by law via other means, as provided by applicable law and within the time period provided by such law.

23. Governing Law.

This Agreement shall be governed by and interpreted in accordance with the Federal laws of the United States.

24. Choice of Language.

(Optional Program-specific application clause) The parties have requested that this Agreement and all Documents and other communications transmitted via the EDI Network or otherwise delivered with respect to this Agreement be expressed in the English language. (Should include translation.)

25. Dispute Resolution.

All disputes, differences, disagreements, and/or claims between the parties arising under or relating to this agreement that are not resolved by negotiation and that the parties cannot agree to submit for arbitration or other procedure for the resolution of disputes, shall be subject to the jurisdiction of U.S. Courts.

26. Entire Agreement.

This Agreement (and the Implementation Guide and Appendix) constitute the complete agreement of the parties relating to the matters specified in this Agreement and supersede all prior representations or agreements, whether oral or written, with respect to such matters. No oral modification or waiver of any of the provisions of this Agreement shall be binding on either party. As the Partners develop additional capabilities respecting EDI, additional Addenda may be added to this Agreement. EPA does not intend to change guidelines without just cause or without consulting industry, however, as a practical matter it is too cumbersome to obtain formal agreements from each Submitter when technical or procedural changes are required, particularly to the Implementation Guidelines. Therefore, EPA will publish notice of new Addenda appending this Agreement and their effective date in the Federal Register. Upon the effective date, each Addendum shall be appended to this Agreement.

This Agreement is for the benefit of, and shall be binding upon, the parties and their respective successors and assigns.

(To be signed by the Delegated Authority in specific EPA Office)

Dated: _____

_____

_____
Name of Delegated Authority
Title of Delegated Authority

III. MODEL OF EPA TERMS AND CONDITIONS AGREEMENT MEMORANDUM

Program-specific notices will contain the memorandum, similar to this model agreement memorandum, which the Submitter will sign and return to EPA. The program-specific TCA will stipulate what actions will constitute acceptance by EPA of a Submitter's signed and returned agreement memorandum and the effective date of the agreement.

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APPENDIX C — CROSS REFERENCE MATRIX OF PHASE I CORE DATA MODEL vs. EIIP X12 841 CONVENTION DOCUMENT

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This table is a cross reference between the EIIP X12 841 Convention Document and the EIIP Phase I Core Data Model. The table displays each data entity and data attribute specified in the data model and where the corresponding data element is located in the convention document. The data model entities and attributes are for reference use only.

EIIP Entity	EIIP Attribute	X12 Data Element
Activity/Schedule	Start Date/Time	Activity (throughput) beginning date and time: DTM02 in LX loop (pos. 551) *and* DTM03 in LX loop *and* DTM05 in LX loop **if** HL03 = 'C' **and** DTM01 in LX loop = '196'
Activity/Schedule	Process Rate/Throughput	Activity (throughput) data: MEA03 in LX loop (pos. 545) **if** HL03 = 'C' **and** MEA01 in LX loop = 'TR'
Activity/Schedule	Confidentiality Indicator	Confidentiality indicator: SPI01 in detail level (pos. 481) **if** HL03 = 'C'
Activity/Schedule	Maximum Throughput	Maximum throughput: MEA06 in LX loop (pos. 545) **if** HL03 = 'C' **and** MEA02 in LX loop = 'TR'
Activity/Schedule	End Date/Time	Activity (throughput) end date and time: DTM02 in LX loop (pos. 551) *and* DTM03 in LX loop *and* DTM05 in LX loop **if** HL03 = 'C' **and** DTM01 in LX loop = '197'
Activity/Schedule	Throughput Method Code	Throughput method code: REF02 in LX loop (pos. 553) *and* REF03 in LX loop **if** HL03 = 'C' **and** REF01 in LX loop = 'IX'
Activity/Schedule	Reliability Indicator	DARS quality rating score: REF02 in LX loop (pos. 553) **if** HL03 = 'C' **and** REF01 in LX loop = 'D0'
Activity/Schedule	Unit of Measure	Activity (throughput) data: MEA04 [composite] in LX loop (pos. 545) **if** HL03 = 'C'
Aggregate Controls as Applied	Pollutant Code	CAS number/pollutant: SPI03 in detail level (pos. 639) **if** HL03 = '9' **and** CID04 in detail level = 'CE'

EIIP Entity	EIIP Attribute	X12 Data Element
Aggregate Controls as Applied	Total Capture/Control Efficiency	Total capture/control efficiency: MEA03 in CID loop (pos. 741) **if** HL03 = '9' **and** CID04 in detail level = 'CE' **and** MEA01 in CID loop = 'AH'
Aggregate Controls as Applied	Rule Effectiveness	Rule effectiveness: MEA03 in CID loop (pos. 741) **if** HL03 = '9' **and** CID04 in detail level = 'CE' **and** MEA01 in CID loop = 'AG'
Aggregate Controls as Applied	Rule Penetration	Rule penetration: MEA03 in CID loop (pos. 741) **if** HL03 = '9' **and** CID04 in detail level = 'CE' **and** MEA01 in CID loop = 'PM'
Aggregate Controls as Applied	Rule Effectiveness Method Code	Regulation identifier for rule effectiveness: REF02 in MEA loop (pos. 745) **if** HL03 = '9' **and** CID04 in detail level = 'CE' **and** MEA01 in CID loop = 'AG' **and** REF01 in MEA loop = 'ZZ'
Control Equipment	Pollutant Code	CAS Number/Pollutant code: LIN03 in LX loop (pos. 225) **if** HL03 = '5'
Control Equipment	Percent Capture Efficiency	Percent capture efficiency: MEA03 in LX loop (pos. 229) **if** HL03 = '5' **and** MEA02 in LX loop = 'IGR'
Control Equipment	Percent Control Efficiency	Percent control efficiency: MEA03 in LX loop (pos. 229) **if** HL03 = '5' **and** MEA02 in LX loop = 'COT'
Control Equipment	Device Type	Physical unit code: PID04 in detail level (pos. 187) **if** HL03 = '5' **and** PID02 in detail level = 'PP'
Control Equipment	Method Code	Currently no mapping - to be include in future version of convention document
Control Equipment	Description	Description: PID05 in detail level (pos. 187) **if** HL03 = '5' **and** PID02 in detail level = 'PP' **and** PID04 in detail level = '02'
Control Equipment	Capacity	Volume: MEA03 in LX loop (pos. 229) **if** HL03 = '5' **and** PID04 in detail level = '02' **and** MEA02 in LX loop = 'VOL'

EIIP Entity	EIIP Attribute	X12 Data Element
Control Equipment	Capacity Units	Control unit data: MEA04 (C00101) in LX loop (pos. 229) **if** HL03 = '5' **and** PID04 in detail level = '02' **and** MEA02 in LX loop = 'VOL'
Control Equipment	Status	Operational status: REF02 in LX loop (pos. 237) **if** HL03 = '5' **and** PID04 in detail level = '02' **and** REF01 in LX loop = 'ZZ'
Control Strategy	Rule/Regulation Name	Control strategy description: MSG01 in SPI loop (pos. 655) **if** HL03 = '9'
Control Strategy	Permit Requirements	Control strategy description: MSG01 in SPI loop (pos. 655) **if** HL03 = '9'
Control Strategy	Geographic ID Code	Place of occurrence - identification code: N104 in header level (pos. 045) **if** HL03 = '5' **and** N101 in SPI loop = '7C' **and** N103 in SPI loop = '93' **and** N104 in SPI loop = N104 in header level **and** N103 in header level = '93' *Note: Control Strategy holds a child relationship to the Physical-level which contains these data.*
Defined Areas	Geographic ID Code	Place of occurrence - identification code: N104 in header level (pos. 045)
Defined Areas	Nonattainment Area Code	Nonattainment area data: N406 in header level (pos. 054) **if** N405 in header level = 'RG'
Defined Areas	Area Name	Place of occurrence: N102 in header level N1 loop (Pos. 045)
Dynamic Grid	Geographic ID Code	Place of occurrence - identification code: N104 in header level (pos. 045) **if** HL03 = '4' **and** N101 in SPI loop = '7C' **and** N103 in SPI loop = '93' **and** N104 in SPI loop = N104 in header level **and** N103 in header level = '93'
Dynamic Grid	Grid ID	Dynamic grid: REF03 in LX loop (pos. 079) **if** HL03 = '4' **and** REF01 in LX loop = '6E' **and** REF02 in LX loop = '05'
Dynamic Grid	Number of X Cells	Dynamic grid data: MEA03 in LX loop (pos. 071) **if** HL03 = '4' **and** MEA01 in LX loop = 'PO' **and** MEA02 in LX loop = 'WD'

EIIP Entity	EIIP Attribute	X12 Data Element
Dynamic Grid	X Cell Size	Dynamic grid data: MEA03 in LX loop (pos. 071) **if** HL03 = '4' **and** MEA01 in LX loop = 'PO' **and** MEA02 in LX loop = 'WD'
Dynamic Grid	Number of Y Cells	Dynamic grid data: MEA03 in LX loop (pos. 071) **if** HL03 = '4' **and** MEA01 in LX loop = 'PO' **and** MEA02 in LX loop = 'HT'
Dynamic Grid	Y Cell Size	Dynamic grid data: MEA03 in LX loop (pos. 071) **if** HL03 = '4' **and** MEA01 in LX loop = 'PO' **and** MEA02 in LX loop = 'HT'
Dynamic Grid	Projection System Name	Projection system name: REF03 in LX loop (pos. 079) **if** HL03 = '4' **and** REF01 in LX loop = '6E' **and** REF02 in LX loop = '06'
Emission Factors	Start Date/Time	Activity (throughput) beginning date and time: DTM02 in LX loop (pos. 551) *and* DTM03 in LX loop *and* DTM05 in LX loop **if** HL03 = 'C' **and** DTM01 in LX loop = '196' *Note: Emission Factors holds a child relationship to Activity-level which contains these data.*
Emission Factors	End Date/Time	Activity (throughput) end date and time: DTM02 in LX loop (pos. 551) *and* DTM03 in LX loop *and* DTM05 in LX loop **if** HL03 = 'C' **and** DTM01 in LX loop = '197' *Note: Emission Factors holds a child relationship to Activity-level which contains these data.*
Emission Factors	Pollutant Code	Pollutant: SPI03 in detail level (pos. 639) **if** HL03 = '9' **and** CID04 in detail level = 'EF'
Emission Factors	Factor Type Code	No mapping - to be removed from model
Emission Factors	Numeric Value	Emission factor data: STA02 in CID loop (pos. 751) **if** HL03 = '9' **and** CID04 in detail level = 'EF'
Emission Factors	Unit of Measure	Emission factor data: STA03 (C00101) in CID loop (pos. 751) **if** HL03 = '9' **and** CID04 in detail level = 'EF'

EIIP Entity	EIIP Attribute	X12 Data Element
Emission Factors	Material	Activity (throughput) product: REF02 in LX loop (pos. 553) **if** HL03 = 'C' **and** REF01 in the LX loop = 'PG' *Note: Emission Factors holds a child relationship to Activity-level which contains these data.*
Emission Factors	Calculation Method	Emission factor method code: REF02 in STA loop (pos. 755) **if** HL03 = '9' **and** CID04 in detail level = 'EF' **and** REF01 in STA loop = 'C3'
Emission Factors	Control Status	Emission factor control type: TMD03 in CID loop (pos. 729) **if** HL03 = '9' **and** CID04 in detail level = 'EF'
Emission Factors	Reliability Indicator	DARS quality rating score: REF02 in STA loop (pos. 755) **if** HL03 = '9' **and** CID04 in detail level = 'EF' REF01 in STA loop = 'D0'
Emission Process	Start Date/Time	Operating schedule beginning date: DTM02 in STA loop (pos. 437) **if** HL03 = '6' **and** DTM01 in LX loop = '196'
Emission Process	Description	Process identifier comments/description: SPI05 in detail level (pos. 323) **if** HL03 = '6'
Emission Process	SCC	Source Classification Code (SCC): PID04 in detail level (pos. 345) **if** HL03 = '6' **and** PID02 in detail level = 'SC'
Emission Process	Process SIC	Standard Industry Classification Code (SIC) code: REF02 in detail level (pos. 371) **if** HL03 = '6' **and** REF01 in detail level = 'IJ'
Emission Process	Material	Process product: REF02 in STA loop (pos. 439) **if** HL03 = '6' **and** REF01 in STA loop = 'PG'
Emission Process	Material Description	Material description: MSG01 in SPI loop (pos. 339) **if** HL03 = '6'
Emission Process	Federal ID Code	Federal identification code for a process: SPI03 in detail level (pos. 323) **if** HL03 = '6' **and** SPI02 in detail level = 'PE'

EIIP Entity	EIIP Attribute	X12 Data Element
Emission Process	End Date/Time	Operating schedule date: DTM02 in STA loop (pos. 437) **if** HL03 = '6' **and** DTM01 in LX loop = '197'
Emission Process	AMS Code	AIRS Area and Mobile Sources (AMS) code: PID04 in detail level (pos. 345) **if** HL03 = '6' **and** PID02 in detail level = '12'
Emission Process	Winter Throughput Percentage	Seasonal operational adjustment factor data: STA02 in CID loop (pos. 435) *and* DTM01 in STA loop (pos. 437) indicate winter **if** HL03 = '6' **and** CID04 in detail level = 'A' **and** STA01 in CID loop = 'ZZ'
Emission Process	Spring Throughput Percentage	Seasonal operational adjustment factor data: STA02 in CID loop (pos. 435) *and* DTM01 in STA loop (pos. 437) indicate spring **if** HL03 = '6' **and** CID04 in detail level = 'A' **and** STA01 in CID loop = 'ZZ'
Emission Process	Summer Throughput Percentage	Seasonal operational adjustment factor data: STA02 in CID loop (pos. 435) *and* DTM01 in STA loop (pos. 437) indicate summer **if** HL03 = '6' **and** CID04 in detail level = 'A' **and** STA01 in CID loop = 'ZZ'
Emission Process	Fall Throughput Percentage	Seasonal operational adjustment factor data: STA02 in CID loop (pos. 435) *and* DTM01 in STA loop (pos. 437) indicate fall **if** HL03 = '6' **and** CID04 in detail level = 'A' **and** STA01 in CID loop = 'ZZ'
Emission Process	Hours Per Day	Operating schedule data: STA03 (C00101) in CID loop (pos. 435) = 'HR' *and* STA03 (C001004) in CID loop = 'DA' *and* STA07 (C00105) in CID loop indicates '-1' **if** HL03 = '6' **and** CID04 in detail level = 'S' **and** STA01 in CID loop = '30'
Emission Process	Days Per Week	Operating schedule data: STA03 (C00101) in CID loop (pos. 435) = 'DA' *and* STA03 (C001004) in CID loop = 'WK' *and* STA07 (C00105) in CID loop indicates '-1' **if** HL03 = '6' **and** CID04 in detail level = 'S' **and** STA01 in CID loop = '30'

EIIP Entity	EIIP Attribute	X12 Data Element
Emission Process	Weeks Per Year	Operating schedule data: STA03 (C00101) in CID loop (pos. 435) = 'WK' *and* STA03 (C001004) in CID loop = 'YR' **if** STA07 (C00105) in CID loop indicates '-1' **if** HL03 = '6' **and** CID04 in detail level = 'S' **and** STA01 in CID loop = '30'
Emission Process	Hours Per Year	Operating schedule data: STA03 (C00101) in CID loop (pos. 435) = 'HR' *and* STA03 (C001004) in CID loop = 'YR' **if** STA07 (C00105) in CID loop indicates '-1' **if** HL03 = '6' **and** CID04 in detail level = 'S' **and** STA01 in CID loop = '30'
Emission Process	Maximum Actual Throughput	Maximum actual throughput: STA02 in CID loop (pos. 435) **if** HL03 = '6' **and** CID04 in detail level = 'T' **and** STA01 in CID loop = '34'
Emission Process	Heat Content	Heat content: STA02 in CID loop (pos. 435) **if** HL03 = '6' **and** CID04 in detail level = 'HC' **and** STA01 in CID loop = '34'
Emission Process	Sulfur Content	Sulfur content: STA02 in CID loop (pos. 435) **if** HL03 = '6' **and** CID04 in detail level = 'SC' **and** STA01 in CID loop = '34'
Emission Process	Ash Content	Ash content: STA02 in CID loop (pos. 435) **if** HL03 = '6' **and** CID04 in detail level = 'AC' **and** STA01 in CID loop = '34'
Emission Release Point	Emission Release Point Type	Physical unit code: PID04 in detail level (pos. 187) **if** HL03 = '5' **and** PID02 in detail level = 'PP'
Emission Release Point	Federal ID Code	Federal identifier code: SPI03 in detail level (pos. 165) **if** HL03 = '5' **and** SPI02 in detail level = 'PE'
Emission Release Point	Status	Operational status: REF02 in LX loop (pos. 237) **if** HL03 = '5' **and** REF01 in LX loop = 'ZZ'
Emission Unit/Physical Unit	Federal ID Code	Federal identifier code: SPI03 in detail level (pos. 165) **if** HL03 = '5' **and** SPI02 in detail level = 'PE'

EIIP Entity	EIIP Attribute	X12 Data Element
Emission Unit/Physical Unit	Description	Description: PID05 in detail level (pos. 187) **if** HL03 = '5' **and** PID02 in detail level = 'PP' **and** PID04 in detail level = '03'
Emission Unit/Physical Unit	Emission Unit Type Code	Physical unit code: PID04 in detail level (pos. 187) **if** HL03 = '5' **and** PID02 in detail level = 'PP'
Emission Unit/Physical Unit	Number of Units	Number of units: MEA03 in PID loop (pos. 193) **if** HL03 = '5' **and** MEA01 in PID loop = 'CT'
Emission Unit/Physical Unit	Confidentiality Indicator	Confidentiality indicator SPI01 in detail level (pos. 165) **if** HL03 = '5'
Emission Unit/Physical Unit	Date Installed/Modified	Time period associated with operational status: DTM02 in LX loop (pos. 235) *and* DTM05 in LX loop **if** HL03 = '5' **and** DTM01 in LX loop = '169' **and** REF01 in LX loop = 'ZZ' **and** REF02 in LX loop has a value
Emission Unit/Physical Unit	Rule Applicability	Currently no mapping - to be include in future version of convention document
Emission Unit/Physical Unit	Design Capacity	Design capacity: MEA03 in PID loop (pos. 193) **if** HL03 = '5' **and** MEA01 in PID loop = 'PD' **and** MEA02 in PID loop = 'VOL'
Emission Unit/Physical Unit	Capacity Units	Design capacity data: MEA04 (C00101) in PID loop (pos. 193) **if** HL03 = '5' **and** MEA01 in PID loop = 'PD' MEA02 in PID loop = 'VOL'
Emission Unit/Physical Unit	State/Local Emission Unit ID Code	State identification code/description: SPI03 in detail level (pos. 165) **if** HL03 = '5' **and** SPI02 in detail level = 'G5' and Local identification code/description: SPI03 in detail level (pos. 165) **if** HL03 = '5' **and** SPI02 in detail level = 'WF'

EIIP Entity	EIIP Attribute	X12 Data Element
Emission Unit/Physical Unit	Status	Operational status: REF02 in LX loop (pos. 237) **if** HL03 = '5' **and** PID04 in detail level = '03' **and** REF01 in LX loop = 'ZZ'
Emissions	Start Date/Time	Activity (throughput) beginning date and time: DTM02 in LX loop (pos. 551) *and* DTM03 in LX loop *and* DTM05 in LX loop **if** HL03 = 'C' **and** DTM01 in LX loop = '196' *Note: Emissions holds a child relationship to the Activity-level which contains these data.*
Emissions	Pollutant Code	CAS number/pollutant: SPI03 in detail level (pos. 639) **if** HL03 = '9' **and** CID04 in detail level = 'ES'
Emissions	Emission Type	Type of estimated emission measurement: STA01 in CID loop (pos. 751) *and/or* STA07 in CID loop *and/or* STA08 in CID loop **if** HL03 = '9' **and** CID04 in detail level = 'ES'
Emissions	Numeric Value	Pollutant-specific estimated emissions data: STA02 in CID loop (pos. 751) **if** HL03 = '9' **and** CID04 in detail level = 'ES'
Emissions	Unit of Measure	Pollutant-specific estimated emissions data: STA03 [composite] in CID loop (pos. 751) **if** HL03 = '9' **and** CID04 in detail level = 'ES'
Emissions	Method Code	Estimated emissions method code: REF02 in STA loop (pos. 755) **if** HL03 = '9' **and** CID04 in detail level = 'ES' **and** REF01 in STA loop = 'C3'
Emissions	Reliability Indicator	DARS quality rating score: REF02 in STA loop (pos. 755) **if** HL03 = '9' **and** CID04 in detail level = 'ES' **and** REF01 in STA loop = 'D0'
Emissions	End Date	Activity (throughput) end date and time: DTM02 in LX loop (pos. 551) *and* DTM03 in LX loop *and* DTM05 in LX loop **if** HL03 = 'C' **and** DTM01 in LX loop = '197' *Note: Emissions holds a child relationship to the Activity-level which contains these data.*

EIIP Entity	EIIP Attribute	X12 Data Element
Geographic Coordinates	Sequence Number	Dynamic grid cell: MEA03 in LX loop (pos. 071) *and* MEA04 [composite] in LX loop = 'EA' **if** HL03 = '4' **and** MEA01 in LX loop = 'PO'
Geographic Coordinates	Geographic ID Code	Place of occurrence - identification code: N104 in header level (pos. 045)
Geographic Coordinates	XY Coordinate Type	Dynamic grid coordinate: REF04 [composite] in LX loop (pos. 079) **if** REF01 in LX loop = '6E' **and** REF02 in LX loop = '05' *Note: Coordinate type specified by qualifier employed.*
Geographic Coordinates	UTM Zone	Universal transverse mercator - zone: REF04 (C04006) in LX loop (pos. 079) **if** REF01 in LX loop = '6E' **and** REF02 in LX loop = '05' **and** REF04 (C04005) in LX loop = 'XW'
Geographic Coordinates	X Coordinate	Latitude: REF04 (C04004) in LX loop (pos. 079) **if** REF01 in LX loop = '6E' **and** REF02 in LX loop = '05' **and** REF04 (C04003) in LX loop = 'LQ'
Geographic Coordinates	Y Coordinate	Longitude: REF04 (C04002) in LX loop (pos. 079) **if** REF01 in LX loop = '6E' **and** REF02 in LX loop = '05' **and** REF04 (C04001) in LX loop = 'LK'
Geographic Coordinates	Elevation	Currently no mapping - to be include in future version of convention document
Geographic Location	Geographic ID Code	Place of occurrence - identification code: N104 in header level (pos. 045)
Geographic Location	Country	Country code: N404 in header level (pos. 054)
Geographic Location	EPA Region	EPA Region: N406 in header level (pos. 054) **if** N405 in header level = 'RJ'
Geographic Location	State/Province/Territory (FIPS)	State or province: N402 in header level (pos. 054)
Geographic Location	County/Parish/Reservation (FIPS)	County/parish code: REF02 in header level N1 loop (pos. 057) **if** REF01 in header level N1 loop = 'ZX'
Geographic Location	Air Basin	Air basin data: REF02 in header level N1 loop (pos. 057) **if** REF01 in header level N1 loop = 'ZZ'

EIIP Entity	EIIP Attribute	X12 Data Element
Geographic Location	Municipality	Municipality: N102 in header level (pos. 045) **if** N101 in header level = 'C6'
Geographic Location	Grid ID	Projection system name: REF03 in LX loop (pos. 079) **if** REF01 in LX loop = '6E' **and** REF02 in LX loop = '06'
Geographic Location	i Cell	Currently no mapping - to be include in future version of convention document
Geographic Location	j Cell	Currently no mapping - to be include in future version of convention document
Geographic Location	Air Quality Control Region	Currently no mapping - to be include in future version of convention document
Geographic Location	City	City name: N401 in header level (pos. 054) N405 = 'FI'
Geographic Location	Highway Link/TAZ ID	Highway link/TAZ ID: REF02 in header level N1 loop (pos. 057) **if** REF01 in header level N1 loop = 'WH'
Meteorology	Geographic ID Code	Place of occurrence - identification code: N104 in header level (pos. 045) **if** HL03 = '5' **and** N101 in SPI loop = '7C' **and** N103 in SPI loop = '93' **and** N104 in SPI loop = N104 in header level **and** N103 in header level = '93' *Note: Meteorology holds a child relationship to the Physical-level which contains these data.*
Meteorology	Start Date/Time	Meteorological parameter beginning date and time: DTM02 in MEA loop (pos. 585) *and* DTM03 in MEA loop *and* DTM05 in MEA loop **if** HL03 = 'C' **and** CID04 in detail level = 'M' **and** DTM01 in MEA loop = '196'
Meteorology	End Date/Time	Meteorological parameter end date and time: DTM02 in MEA loop (pos. 585) *and* DTM03 in MEA loop *and* DTM05 in MEA loop **if** HL03 = 'C' **and** CID04 in detail level = 'M' **and** DTM01 in MEA loop = '197'
Meteorology	Wind Speed	Wind speed: MEA03 in CID loop (pos. 583) **if** HL03 = 'C' **and** CID04 in detail level = 'M' **and** MEA01 in CID loop = 'EN' **and** MEA02 in CID loop = 'R7'

EIIP Entity	EIIP Attribute	X12 Data Element
Meteorology	Wind Speed Units	Wind speed data: MEA04 (C00101) in CID loop (pos. 583) **if** HL03 = 'C' **and** CID04 in detail level = 'M' **and** MEA01 in CID loop = 'EN' **and** MEA02 in CID loop = 'R7'
Meteorology	Ambient Temperature	Temperature: MEA03 in CID loop (pos. 583) **if** HL03 = 'C' **and** CID04 in detail level = 'M' **and** MEA01 in CID loop = 'EN' **and** MEA02 in CID loop = 'TC'
Meteorology	Temperature Units	Temperature data: MEA04 (C00101) in CID loop (pos. 583) **if** HL03 = 'C' **and** CID04 in detail level = 'M' **and** MEA01 in CID loop = 'EN' **and** MEA02 in CID loop = 'TC'
Meteorology	Cloud Cover (fraction)	Cloud cover: MEA03 in CID loop (pos. 583) **if** HL03 = 'C' **and** CID04 in detail level = 'M' **and** MEA01 in CID loop = 'EN' **and** MEA02 in CID loop = 'ZZZ'
Meteorology	Humidity	Relative humidity: MEA03 in CID loop (pos. 583) **if** HL03 = 'C' **and** CID04 in detail level = 'M' **and** MEA01 in CID loop = 'EN' **and** MEA02 in CID loop = 'RA'
Meteorology	Humidity Units	Relative humidity data: MEA04 (C00101) in CID loop (pos. 583) **if** HL03 = 'C' **and** CID04 in detail level = 'M' **and** MEA01 in CID loop = 'EN' **and** MEA02 in CID loop = 'RA'
Meteorology	Diurnal Temperature Change	Diurnal temperature change: MEA03 in CID loop (pos. 583) **if** HL03 = 'C' **and** CID04 in detail level = 'M' **and** MEA01 in CID loop = 'EN' **and** MEA02 in CID loop = 'AD'
Meteorology	Visible Radiation	Visible radiation: MEA03 in CID loop (pos. 583) **if** HL03 = 'C' **and** CID04 in detail level = 'M' **and** MEA01 in CID loop = 'EN' **and** MEA02 in CID loop = 'BR'

EIIP Entity	EIIP Attribute	X12 Data Element
Meteorology	Visible Radiation Units	Visible radiation data: MEA04 (C00101) in CID loop (pos. 583) **if** HL03 = 'C' **and** CID04 in detail level = 'M' **and** MEA01 in CID loop = 'EN' **and** MEA02 in CID loop = 'BR'
Path	Origin Type	Physical unit code: PID04 in detail level (pos. 187) **if** HL03 = '5' **and** MEA02 in LX loop = 'DIS' **and** REF01 in LX loop = '5M' **and** REF02 in LX loop has a value **and** PID02 in detail level = 'PP'
Path	Destination Type	Physical unit code: PID04 in detail level (pos. 187) **if** HL03 = '5' **and** PID02 in detail level = 'PP' *Note: Path is defined by identifying the physical unit in an emission path which immediately precedes the unit being reported in the current iteration of the loop. Therefore, the destination of the path is equivalent to the physical unit being reported in the current iteration of the loop.*
Path	Percent Flow from Origin	Path split data: MEA03 in LX loop (pos. 229) **if** HL03 = '5' **and** MEA02 in LX loop = 'DIS' **and**
Process Growth Factors	Initial Year	Process growth factors start year: DTM07 in LX loop (pos. 393) **if** HL03 = '6' **and** DTM01 in LX loop = '196' **and** DTM06 in LX loop = 'CY'
Process Growth Factors	Projected Year	Process growth factors projected action end date: DTM07 in LX loop (pos. 393) **if** HL03 = '6' **and** DTM01 in LX loop = '575' **and** DTM06 in LX loop = 'CY'
Process Growth Factors	Growth Factor	Process growth factor data: MEA03 in LX loop (pos. 387) **if** HL03 = '6' **and** MEA01 in LX loop = 'AG' **and**
Process Growth Factors	Growth Factor Reference	Process growth factor reference text: REF03 in LX loop (pos. 395) **if** HL03 = '6' **and** REF01 in LX loop = 'ZZ'
Process Growth Factors	Control Factor	Currently no mapping - to be include in future version of convention document

EIIP Entity	EIIP Attribute	X12 Data Element
Process Growth Factors	Growth Factor Units	Process growth factor data: MEA04 (C00101) in LX loop (pos. 387) **if** HL03 = '6' **and** MEA01 in LX loop = 'AG'
Site/Source	Geographic ID Code	Place of occurrence - identification code: N104 in header level (pos. 045) **if** HL03 = '4' **and** N101 in SPI loop = '7C' **and** N103 in SPI loop = '93' **and** N104 in SPI loop = N104 in header level **and** N103 in header level = '93'
Site/Source	Site Name	Name: N102 in SPI loop (pos. 019) **if** HL03 = '4' **and** N101 in SPI loop = '7C'
Site/Source	Physical Address	Address information: N301 in header level (pos. 051) *and* N302 in header level **if** HL03 = '4' **and** N101 in SPI loop = '7C' **and** N103 in SPI loop = '93' **and** N104 in SPI loop = N104 in header level **and** N103 in header level = '93' **and** N101 in header level = '7C'
Site/Source	Mailing Address	Address information: N301 in header level (pos. 051) *and* N302 in header level **if** HL03 = '4' **and** N101 in SPI loop = '7C' **and** N103 in SPI loop = '93' **and** N104 in SPI loop = N104 in header level **and** N103 in header level = '93' **and** N101 in header level = 'FE'
Site/Source	Parent Company	Parent company: N102 in header level (pos. 045) **if** HL03 = '4' **and** N101 in SPI loop = '7C' **and** N103 in SPI loop = '93' **and** N104 in SPI loop = N104 in header level **and** N103 in header level = '93' **and** N101 in header level = 'B4'
Site/Source	Parent Company Mailing Address	Address information: N301 in header level (pos. 051) *and* N302 in header level **if** HL03 = '4' **and** N101 in SPI loop = '7C' **and** N103 in SPI loop = '93' **and** N104 in SPI loop = N104 in header level **and** N103 in header level = '93' **and** N101 in header level = 'B4'

EIIP Entity	EIIP Attribute	X12 Data Element
Site/Source	Inventory Contact Name	Preparer: PER02 in header level (pos. 060) **if** HL03 = '4' **and** N101 in SPI loop = '7C' **and** N103 in SPI loop = '93' **and** N104 in SPI loop = N104 in header level **and** N103 in header level = '93' **and** N101 in header level = 'P1' **and** PER01 in header level = 'PI'
Site/Source	Inventory Contact Phone Number	Communication number: PER04 in header level (pos. 060) *or* PER06 in header level **if** HL03 = '4' **and** N101 in SPI loop = '7C' **and** N103 in SPI loop = '93' **and** N104 in SPI loop = N104 in header level **and** N103 in header level = '93' **and** N101 in header level = 'P1' **and** PER01 in header level = 'PI' **and** PER03 in header level = 'TE' *or* PER05 in header level = 'TE'
Site/Source	Inventory Contact Fax Number	Communication number: PER04 in header level (pos. 060) *or* PER06 in header level **if** HL03 = '4' **and** N101 in SPI loop = '7C' **and** N103 in SPI loop = '93' **and** N104 in SPI loop = N104 in header level **and** N103 in header level = '93' **and** N101 in header level = 'P1' **and** PER01 in header level = 'PI' **and** PER03 in header level = 'FX' *or* PER05 in header level = 'FX'
Site/Source	Inventory Contact E-mail Address	Communication number: PER04 in header level (pos. 060) *or* PER06 in header level **if** HL03 = '4' **and** N101 in SPI loop = '7C' **and** N103 in SPI loop = '93' **and** N104 in SPI loop = N104 in header level **and** N103 in header level = '93' **and** N101 in header level = 'P1' **and** PER01 in header level = 'PI' **and** PER03 in header level = 'EM' *or* PER05 in header level = 'EM'
Site/Source	Owner	Owner: N102 in header level (pos. 045) **if** HL03 = '4' **and** N101 in SPI loop = '7C' **and** N103 in SPI loop = '93' **and** N104 in SPI loop = N104 in header level **and** N103 in header level = '93' **and** N101 in header level = 'HA'

EIIP Entity	EIIP Attribute	X12 Data Element
Site/Source	SIC	Standard Industry Classification (SIC) code: REF02 in detail level (pos. 055) **if** HL03 = '4' **and** REF01 in detail level = 'IJ'
Site/Source	Number of Employees	Numbers of employees: MEA03 in LX loop (pos. 071) **if** HL03 = '4' **and** MEA01 in LX loop = 'CT'
Site/Source	Description	Comments for a site/source: SPI05 in detail level (pos. 007) **if** HL03 = '4' **and** SPI02 in detail level = 'IX'
Site/Source	Federal ID Code	Federal key identifier code: SPI03 in detail level (pos. 007) **if** HL03 = '4' **and** SPI02 in detail level = 'IJ'
Site/Source	Federal ID Code #2	Federal identification code: SPI03 in detail level (pos. 007) **if** HL03 = '4' **and** SPI02 in detail level = 'PE'
Site/Source	ORIS Utility Plant Code	ORIS utility plant code: SPI03 in detail level (pos. 007) **if** HL03 = '4' **and** SPI02 in detail level = 'ZZ'
Site/Source	Source Type	Source type code: REF02 in detail level (pos. 055) **if** REF01 in detail level = '06'
Site/Source	Jurisdiction	Jurisdiction: N102 in header level (pos. 045) **if** HL03 = '4' **and** N101 in SPI loop = '7C' **and** N103 in SPI loop = '93' **and** N104 in SPI loop = N104 in header level **and** N103 in header level = '93' **and** N101 in header level = 'JU'
Site/Source	State/Local ID Code	State identification code/description: SPI03 in detail level (pos. 007) **if** HL03 = '4' **and** SPI02 in detail level = 'G5' and Local identification code/description: SPI03 in detail level (pos. 007) **if** HL03 = '4' **and** SPI02 in detail level = 'WF'

EIIP Entity	EIIP Attribute	X12 Data Element
Site/Source	Physical Zip Code	Postal code: N403 in header level (pos. 054) **if** HL03 = '4' **and** N101 in SPI loop = '7C' **and** N103 in SPI loop = '93' **and** N104 in SPI loop = N104 in header level **and** N103 in header level = '93' **and** N101 in header level = '7C'
Site/Source	Census Block ID	Census block: REF02 in header level N1 loop (pos. 057) **if** HL03 = '4' **and** N101 in SPI loop = '7C' **and** N103 in SPI loop = '93' **and** N104 in SPI loop = N104 in header level **and** N103 in header level = '93' **and** N101 in header level = '7C' REF01 in header level N1 loop = 'ZV'
Speciation Profiles	Pollutant #1 Code	Chemical mechanism: CID04 in detail level (pos. 093) **if** HL03 = '4'
Speciation Profiles	Pollutant #2 Name	Chemical surrogate: REF03 in detail level (pos. 113) **if** HL03 = '4' **and** REF01 in detail level = 'I9'
Speciation Profiles	Pollutant #2 Code	Chemical surrogate: REF01 in detail level (pos. 113) **if** HL03 = '4'
Speciation Profiles	Numeric Value	Chemical surrogate data: MEA03 in detail level (pos. 109) **if** HL03 = '4' **and** REF01 in detail level = 'I9'
Speciation Profiles	Unit of Measure	Chemical surrogate data: MEA04 (C00101) in detail level (pos. 109) **if** HL03 = '4' **and** REF01 in detail level = 'I9'
Stack Physical Parameter	Emission Release Point Type	Physical unit code: PID04 in detail level (pos. 187) **if** HL03 = '5' **and** PID02 in detail level = 'PP'
Stack Physical Parameter	Description	Description: PID05 in detail level (pos. 187) **if** HL03 = '5' **and** PID02 in detail level = 'PP' **and** PID04 in detail level = '01'
Stack Physical Parameter	Stack Height	Height above ground: MEA03 in PID loop (pos. 193) **if** HL03 = '5' **and** MEA01 in PID loop = 'PD' **and** MEA02 in PID loop = '5F'

EIIP Entity	EIIP Attribute	X12 Data Element
Stack Physical Parameter	Stack Diameter	Inside diameter: MEA03 in PID loop (pos. 193) **if** HL03 = '5' **and** MEA01 in PID loop = 'PD' **and** MEA02 in PID loop = 'ID'
Stack Physical Parameters	Geographic ID Code	Place of occurrence - identification code: N104 in header level (pos. 045) **if** HL03 = '5' **and** N101 in SPI loop = '7C' **and** N103 in SPI loop = '93' **and** N104 in SPI loop = N104 in header level **and** N103 in header level = '93'
Stack Physical Parameter	Exit Gas Temperature	Exit gas temperature: MEA03 in PID loop (pos. 193) **if** HL03 = '5' **and** MEA01 in PID loop = 'TE'
Stack Physical Parameter	Exit Gas Velocity	Exit gas velocity: MEA03 in PID loop (pos. 193) **if** HL03 = '5' **and** MEA01 in PID loop = 'PD' **and** MEA02 in PID loop = 'ZZZ'
Stack Physical Parameter	Exit Gas Flow Rate	Flow rate: MEA03 in PID loop (pos. 193) **if** HL03 = '5' **and** MEA01 in PID loop = 'PD' **and** MEA02 in PID loop = 'FR'
Stack Physical Parameter	Plume Height	Plume height data: MEA03 in PID loop (pos. 193) **if** HL03 = '5' **and** MEA01 in PID loop = 'BA'
Stack Physical Parameter	Height Above Terrain	Currently no mapping - to be include in future version of convention document

The following table details those EIIP Attributes indicated in the EIIP Core Data Model as being unique identifiers (UID). These elements are intended for use in developing relationships between various EIIP Entities. They are not intended for specific use in the design or development of a database system. However, the structure represented by them must be accounted for in the system in order to maintain the integrity of the entity relationships. The X12 data elements that are correspond are provided for reference to the data model attributes only.

Table of Unique Identifiers Specified in the EIIP Data Model

EIIP Attribute	X12 Data Element
Process UID	Hierarchical ID number: HL02 in detail level (pos. 319) **if** HL03 = '6' *Note: Activity/Schedule holds a child relationship to the Process-level which contains these data.*
Site UID	Hierarchical ID number: HL02 in detail level (pos. 003) **if** HL03 = '4' *Note: Activity/Schedule holds a child relationship to the Site/Source-level which contains these data.*
Unit UID	Hierarchical ID number: HL02 in detail level (pos. 161) **if** HL03 = '5' *Note: Activity/Schedule holds a child relationship to the Physical-level which contains these data.*
Control Strategy UID	Hierarchical ID number: HL02 in detail level of the level indicated **if** HL03 = '9' **and** PID04 in detail level (pos. 661) has a value **and** HL03 of the level indicated has a value *Note: The value in HL02 equals the HL iteration tp which the strategy is applied.*
Control Equipment UID	Hierarchical ID number: HL02 in detail level (pos. 161) **if** HL03 = '5'
Emission Release Point UID	Hierarchical ID number: HL02 in detail level (pos. 161) **if** HL03 = '5'
Origin UID	Hierarchical ID number: HL02 in detail level (pos. 161) **if** HL03 = '5' *Note: The value in HL02 equals the HL iteration which contains the intended origin. Path is defined by identifying the physical unit in an emission path which immediately precedes the unit being reported in the current iteration of the loop. Therefore, the destination of the path is equivalent to the physical unit being reported in the current iteration of the loop.*
Destination UID	Hierarchical ID number: HL02 in detail level (pos. 161) **if** HL03 = '5' *Note: The value in HL02 equals the HL iteration which is being reported (i.e., the destination). Path is defined by identifying the physical unit in an emission path which immediately precedes the unit being reported in the current iteration of the loop. Therefore, the destination of the path is equivalent to the physical unit being reported in the current iteration of the loop.*

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APPENDIX D — EIIP X12 841 CONVENTION DOCUMENT

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841 Specifications/Technical Information

Functional Group ID=SP

Introduction:

This Draft Standard for Trial Use contains the format and establishes the data contents of the Specifications/Technical Information Transaction Set (841) for use within the context of an Electronic Data Interchange (EDI) environment. The transaction set can be used to transmit or request specifications or technical information between trading partners. It can be used to transmit engineering change and engineering change requests. It can also be used to allow EDI trading partners the ability to exchange a complete or partial technical description of a product, process, service, etc. over the same path as any other EDI transaction. The detail area can include graphic, text, parametric, tabular, image, spectral, or audio data. A transmission includes identification information to assist the receiver in interpreting and utilizing the information included in the transaction. Further action as a consequence of the receipt and initial processing of the specification or other technical data may or may not require human intervention. The transmission and receipt of the data may require private agreement between the trading partners to automate the receipt of the data. The total transaction must be in the general form of all ASC X12 transactions so that an EDI computer system will be able to automatically recognize it as a Specification/Technical Information Transaction Set and pass it on for processing of the data itself. The transaction set is not media dependent. The detail area of the Specification/Technical Information Transaction Set provides a structure which allows for the exchange of a variety of specification information. For example, if the transaction contains information describing a complete assembly, it would be necessary to include the assembly model, the models for each of the individual parts, and the associated specifications. In the case of a process it may be necessary to transmit the specification of the product along with the specifications of the process and raw materials. This transaction set ca also be linked to other transaction sets. This transaction set is not limited to a specific transmission protocol and uses other standards as applicable where they do not conflict with these requirements for specification transaction.

Heading:

	Pos. No.	Seg. ID	Name	Req. Des.	Max.Use	Loop Repeat	Notes and Comments
Must Use	003	ST	Transaction Set Header	M	1		
			LOOP ID - SPI			>1	
Must Use	006	SPI	Specification Identifier	M	1		
	009	RDT	Revision Date/Time	O	>1		
	012	NTE	Note/Special Instruction	O	>1		
			LOOP ID - REF			>1	
	027	REF	Reference Identification	O	1		
			LOOP ID - N1			>1	

	036	N1	Name	O	1	
	039	N2	Additional Name Information	O	2	
	042	N3	Address Information	O	2	
	045	N4	Geographic Location	O	>1	
	048	REF	Reference Identification	O	>1	
	051	PER	Administrative Communications Contact	O	>1	

Detail:

Notes and Comments	Pos. No.	Seg. ID	Name	Req. Des.	Max.Use	Loop Repeat	
			LOOP ID - HL			>1	
Must Use	003	HL	Hierarchical Level	M	1		n1
			LOOP ID - SPI			>1	
	006	SPI	Specification Identifier	O	1		
	027	MSG	Message Text	O	>1		
			LOOP ID - N1			>1	
	030	N1	Name	O	1		
	033	N2	Additional Name Information	O	2		
	036	N3	Address Information	O	2		
	039	N4	Geographic Location	O	>1		
			LOOP ID - REF			>1	
	075	REF	Reference Identification	O	1		
			LOOP ID - LX			>1	
	084	LX	Assigned Number	O	1		
Must Use	093	MEA	Measurements	M	>1		
	105	REF	Reference Identification	O	>1		
			LOOP ID - CID			>1	
	114	CID	Characteristic/Class ID	O	1		c1
	120	TMD	Test Method	O	>1		
			LOOP ID - MEA			>1	
	135	MEA	Measurements	O	1		
	141	REF	Reference Identification	O	>1		
			LOOP ID - HL			>1	
Must Use	177	HL	Hierarchical Level	M	1		n2
			LOOP ID - SPI			>1	
	180	SPI	Specification Identifier	O	1		
	201	MSG	Message Text	O	>1		

			LOOP ID - N1			>1	
	204	N1	Name	O	1		
			LOOP ID - PID			>1	
	222	PID	Product/Item Description	O	1		
	231	MEA	Measurements	O	>1		
			LOOP ID - LX			>1	
	258	LX	Assigned Number	O	1		
	261	LIN	Item Identification	O	1		
Must Use	267	MEA	Measurements	M	>1		
	276	DTM	Date/Time Reference	O	>1		
	279	REF	Reference Identification	O	>1		
			LOOP ID - HL			>1	
Must Use	351	HL	Hierarchical Level	M	1		n3
			LOOP ID - SPI			>1	
	354	SPI	Specification Identifier	O	1		
	375	MSG	Message Text	O	>1		
			LOOP ID - N1			>1	
	378	N1	Name	O	1		
			LOOP ID - PID			>1	
	396	PID	Product/Item Description	O	1		
			LOOP ID - REF			>1	
	423	REF	Reference Identification	O	1		
			LOOP ID - LX			>1	
	432	LX	Assigned Number	O	1		
Must Use	441	MEA	Measurements	M	>1		
	450	DTM	Date/Time Reference	O	>1		
	453	REF	Reference Identification	O	>1		
			LOOP ID - CID			>1	
	462	CID	Characteristic/Class ID	O	1		c2
			LOOP ID - STA			>1	
	492	STA	Statistics	O	1		
	495	DTM	Date/Time Reference	O	>1		
	498	REF	Reference Identification	O	>1		
			LOOP ID - HL			>1	
Must Use	525	HL	Hierarchical Level	M	1		n4
			LOOP ID - SPI			>1	
	528	SPI	Specification Identifier	O	1		

			LOOP ID - N1			>1	
	552	N1	Name	O	1		
	567	N9	Reference Identification	O	>1		
			LOOP ID - LX			>1	
	606	LX	Assigned Number	O	1		
Must Use	615	MEA	Measurements	M	>1		
	624	DTM	Date/Time Reference	O	>1		
	627	REF	Reference Identification	O	>1		
			LOOP ID - CID			>1	
	636	CID	Characteristic/Class ID	O	1		c3
			LOOP ID - MEA			>1	
	657	MEA	Measurements	O	1		
	660	DTM	Date/Time Reference	O	>1		
			LOOP ID - STA			>1	
	666	STA	Statistics	O	1		
	669	DTM	Date/Time Reference	O	>1		
	672	REF	Reference Identification	O	>1		
			LOOP ID - HL			>1	
Must Use	699	HL	Hierarchical Level	M	1		n5
			LOOP ID - SPI			>1	
	702	SPI	Specification Identifier	O	1		
	723	MSG	Message Text	O	>1		
			LOOP ID - PID			>1	
	744	PID	Product/Item Description	O	1		
			LOOP ID - CID			>1	
	810	CID	Characteristic/Class ID	O	1		c4
	816	TMD	Test Method	O	>1		
			LOOP ID - MEA			>1	
	831	MEA	Measurements	O	1		
	837	REF	Reference Identification	O	>1		
			LOOP ID - STA			>1	
	840	STA	Statistics	O	1		
	846	REF	Reference Identification	O	>1		

Summary:

Pos.	Seg.		Req.	Loop	Notes and

	No.	ID	Name	Des.	Max.Use	Repeat	Comments
Must Use	010	SE	Transaction Set Trailer	M	1		

Transaction Set Notes

1. To be meaningful, at least one of the SPI, PID, REF, MEA, EFI or CID loops must be present with each occurrence of the HL loop.

2. To be meaningful, at least one of the SPI, PID, REF, MEA, EFI or CID loops must be present with each occurrence of the HL loop.

3. To be meaningful, at least one of the SPI, PID, REF, MEA, EFI or CID loops must be present with each occurrence of the HL loop.

4. To be meaningful, at least one of the SPI, PID, REF, MEA, EFI or CID loops must be present with each occurrence of the HL loop.

5. To be meaningful, at least one of the SPI, PID, REF, MEA, EFI or CID loops must be present with each occurrence of the HL loop.

Transaction Set Comments

1. The CID segment may be used to define either a general class of properties, such as physical properties, or an individual property within a class. The CID loop allows the user the ability to define specifications such as the properties of the item or class, the environmental conditions under which the specifications apply, the test methods to be used, and other parameters related to properties within the current HL hierarchical level.

2. The CID segment may be used to define either a general class of properties, such as physical properties, or an individual property within a class. The CID loop allows the user the ability to define specifications such as the properties of the item or class, the environmental conditions under which the specifications apply, the test methods to be used, and other parameters related to properties within the current HL hierarchical level.

3. The CID segment may be used to define either a general class of properties, such as physical properties, or an individual property within a class. The CID loop allows the user the ability to define specifications such as the properties of the item or class, the environmental conditions under which the specifications apply, the test methods to be used, and other parameters related to properties within the current HL hierarchical level.

4. The CID segment may be used to define either a general class of properties, such as physical properties, or an individual property within a class. The CID loop allows the user the ability to define specifications such as the properties of the item or class, the environmental conditions under which the specifications apply, the test methods to be used, and other parameters related to properties within the current HL hierarchical level.

Segment: **ST** **Transaction Set Header**
Position: 003
Loop:
Level: Heading:
Usage: Mandatory
Max Use: 1
Purpose: To indicate the start of a transaction set and to assign a control number
Syntax Notes:
Semantic Notes: **1** The transaction set identifier (ST01) used by the translation routines of the interchange partners to select the appropriate transaction set definition (e.g., 810 selects the Invoice Transaction Set).
Comments:

Notes:

1. This level/loop (header) provides data associated with the entire transaction set (or those data referenced within the transaction set), including:

- confidentiality indicator
- inventory type
- general comments
- general descriptions
- data model version
- transmission date and time
- data collection period
- general notes
- DARS data quality score associated with the transaction set
- organization name
- location
- map coordinate
- contact data

2. Loop (segments ST, SPI, RDT, NTE, REF, N1, N2, N3, N4, REF, PER) Example:

ST*841*0001~
SPI*90*17*01**EPA*J*00~
RDT***196*19980101~
RDT***197*19981231~
RDT*H*1*097*19980401*1237~
NTE*RPT*Requested by Jan Doe of Scientific Answers Corporation.~
REF*D0**.025~
N1*RL*Smith, Jones, Johnson, Murphy, and *1*123456789~
N2*Doe, CE~
N3*P.O. Box 369*Main Street~
N4*Hometown*VT*36363*USA*RJ*I~
PER*P1*Carol Murphy*TE*800 333 3699*FX*669 333 3693~
< 841 transaction set identified as 0001 transmitting an original transmission of a government non-classified transaction set using EIIP phase I format for a proposed inventory required by the EPA; inventory start date of January 1, 1998; inventory end date December 31, 1998, transaction set creation date April 1, 1998 at 12:37pm; inventory requested by Jan Doe; the data reported has a DARS data quality score of .025; name (over 35 characters) and of the organization that is transmitting the transaction set and the name of the inventory preparer >

3. Segment Example:

ST*841*0001~
< 841 transaction set identified as 0001 >

Data Element Summary

Ref. Des.	Data Element	Name	Attributes

>>	**ST01**	**143**	**Transaction Set Identifier Code** Code uniquely identifying a Transaction Set 841 Specifications/Technical Information	**M**	**ID 3/3**
>>	**ST02**	**329**	**Transaction Set Control Number** Identifying control number that must be unique within the transaction set functional group assigned by the originator for a transaction set	**M**	**AN 4/9**

Segment: **SPI** **Specification Identifier**
Position: 006
Loop: SPI Mandatory
Level: Heading:
Usage: Mandatory
Max Use: 1
Purpose: To provide a description of the included specification or technical data items
Syntax Notes: **1** If either SPI02 or SPI03 is present, then the other is required.
Semantic Notes:
Comments:
Notes: 1. This loop provides the following information:

- confidentiality indicator
- inventory type
- general comments
- general descriptions
- data model version
- transmission date and time
- data collection period
- general notes

2. This segment provides the confidentiality indicator, inventory type, general comments, or general descriptions that apply to the entire transaction set.

3. This loop must be applied at least one (1) time to provide SPI02 code "17".

4. The symbol "??" indicates a code value that is to be assigned in a future version/release of the X12 standard.

5. Loop (segments SPI, RDT, NTE) Example:

SPI*90*17*01**EPA*J*00~
RDT***196*19980101~
RDT***197*19981231~
RDT*H*1*097*19980401*1237~
NTE*RPT*Requested by Jan Doe of Scientific Answers Corporation.~
< original transmission of a government non-classified transaction set using EIIP phase I format for a proposed inventory required by the EPA; inventory start date of January 1, 1998; inventory end date December 31, 1998, transaction set creation date April 1, 1998 at 12:37pm; inventory requested by Jan Doe >

6. Segment Example:

SPI*90*17*01**EPA*J*00~
< original transmission of a government non-classified transaction set using EIIP phase I format for a proposed inventory required by the EPA >

Data Element Summary

	Ref. Des.	Data Element	Name	Attr	
ibutes					
>>	**SPI01**	**786**	**Security Level Code** Code indicating the level of confidentiality assigned by the sender to the information following 1. This element contains the confidentiality indicator associated with the data in the entire transaction set. Select one from the following list: 00 Company Non-Classified 02 Company Confidential 90 Government Non-Classified 92 Government Confidential	**M**	**ID 2/2**
	SPI02	**128**	**Reference Identification Qualifier** Code qualifying the Reference Identification 1. This element indicates the type of information being reported with this iteration of the loop. Select one from the following list: 17 Client Reporting Category Code assigned by the client to categorize participants for reporting requirements Indicates the applicable EIIP phase IX Item Number Indicates general comments PE Plant Number Indicates general descriptions	**X**	**ID 2/3**
	SPI03	**127**	**Reference Identification** Reference information as defined for a particular Transaction Set or as specified by the Reference Identification Qualifier 1. When SPI02 is "IX" or "PE", this element contains a reference number associated with a specific entry in SPI05. 2. When SPI02 is "17", this element contains an EIIP phase (level of detail) code. Select one from the following list: 01 Level 1 (EIIP Phase I) 02 Level 2 (EIIP Phase II) 03 Level 3 (EIIP Phase III)	**X**	**AN 1/30**
	SPI05	**791**	**Entity Purpose** The reason for the existence of the data item specified by the electronic data item independent of its presence in an EDI transaction 1. When SPI02 is "IX" or "PE", this element contains the entry associated with SPI03. 2. When SPI02 is "17", this element contains an inventory type code. Select one from the following list:	**O**	**AN 1/80**

EMIS	Annual stationary major source inventory data submittal
EPA	EPA required data submittal
EPARFP	Reasonable Further Progress (RFP) inventory data submittal
EPASIP	Base year State Implementation Plan (SIP) inventory data submittal
LOC	Data submittal between local and state agency
NON	Nonattainment modeling data submittal
PLAN	Planning inventory (e.g., seasonal) data submittal
REGION	Regional area modeling data submittal
SPEC	Special data submittal
SUBNON	Sub-nonattainment area modeling data submittal
SUPER	Super-regional area modeling data submittal

SPI06 792 Entity Status Code O ID 1/1

Code indicating the current status of the data item specified by the electronic data item

?? Conditional

1. This element does not apply with BIOGENIC SOURCE reporting.

2. This element only applies when SPI02 is "17".

3. When SPI02 is "17", this element must contain an inventory status code. Select one from the following list:

A	Approved Version
J	Proposed A specification that has yet to be accepted or approved by both trading partners
Z	Mutually Defined The status of submission is mutually defined between the sending and receiving parties

SPI07 353 Transaction Set Purpose Code O ID 2/2

Code identifying purpose of transaction set

1. This element only applies when SPI02 is "17".

2. When SPI02 is "17", this element must contain a transaction set purpose code. Select one from the following list:

00	Original
05	Replace 1. This code indicates that this transaction set will be used to replace existing site/source information after review by the receiving party. All applicable site/source information must be include in this "replace" transaction set.

SPI12	**554**	**Assigned Number**	**O**	**N0 1/6**

Number assigned for differentiation within a transaction set

1. This element contains a unique report number that differentiates this submission from others. This element is applied at the discretion of the trading partner.

Segment: **RDT** **Revision Date/Time**
Position: 009
Loop: SPI Mandatory
Level: Heading:
Usage: Optional
Max Use: >1
Purpose: To specify the revision level of the electronic data item
Syntax Notes: **1** If RDT01 is present, then RDT02 is required.
2 If RDT03 is present, then at least one of RDT04 or RDT05 is required.
3 If RDT06 is present, then RDT05 is required.
Semantic Notes:
Comments:
Notes: 1. This segment provides information about the data model version, data collection period dates, and transmission date and time.

2. This segment must be applied three (3) times for each transaction set: to provide the creation date and time of the transmission (RDT03 is "097"), the beginning date of the data collection (RDT03 is "196"), and the end date of the data collection (RDT03 is "197").

3. Segment Example (examples of all three required iterations):

RDT***196*19980101~
< inventory start date of January 1, 1998 >

RDT***197*19981231~
< inventory end date of December 31, 1998 >

RDT*H*1*097*19980401*1237~
< data model version is 1 and the transaction set was created on April 1, 1998 at 12:37pm >

Data Element Summary

Ref. Des.	Data Element	Name	Attr	ibutes
RDT01	**795**	**Revision Level Code** Code indicating the revision or engineering change level of the data items referred to by the specification number 1. This element indicates that this segment contains the EIIP data model version number to which this transaction set applies. H Version Level	**O**	**ID 1/1**
RDT02	**796**	**Revision Value** Revision or engineering change level of the data items referred to by the specification number 1. This element contains the value associated with RDT01.	**X**	**AN 1/30**

RDT03	**374**	**Date/Time Qualifier**	**O**	**ID 3/3**

Code specifying type of date or time, or both date and time

1. This element indicates time periods associated with this transaction set and the data being reported. Select one from the following list:

097	Transaction Creation
196	Start Inventory Year
197	End Inventory Year

RDT04	**373**	**Date**	**X**	**DT 8/8**

Date expressed as CCYYMMDD

1. This element contains the value associated with the code specified in RDT03.

RDT05	**337**	**Time**	**X**	**TM 4/8**

Time expressed in 24-hour clock time as follows: HHMM, or HHMMSS, or HHMMSSD, or HHMMSSDD, where H = hours (00-23), M = minutes (00-59), S = integer seconds (00-59) and DD = decimal seconds; decimal seconds are expressed as follows: D = tenths (0-9) and DD = hundredths (00-99)

1. This element only applies when RDT03 is "097".

2. When RDT03 is "097", this element contains the time this transaction was created.

Segment: **NTE** **Note/Special Instruction**
Position: 012
Loop: SPI Mandatory
Level: Heading:
Usage: Optional
Max Use: >1
Purpose: To transmit information in a free-form format, if necessary, for comment or special instruction
Syntax Notes:
Semantic Notes:
Comments: **1** The NTE segment permits free-form information/data which, under ANSI X12 standard implementations, is not machine processable. The use of the NTE segment should therefore be avoided, if at all possible, in an automated environment.

Notes:
1. This segment provides general notes for the entire transaction set.

2. Segment Example:

NTE*RPT*Request by Jan Doe of Scientific Answers Corporation.~
< report remarks indicating the party requesting this transaction set >

Data Element Summary

	Ref. Des.	Data Element	Name	Attr	ibutes
	NTE01	**363**	**Note Reference Code** Code identifying the functional area or purpose for which the note applies 1. This element indicates special notes pertaining to this transaction set. RPT Report Remarks	**O**	**ID 3/3**
>>	**NTE02**	**352**	**Description** A free-form description to clarify the related data elements and their content 1. This element contains the entry associated with NTE01.	**M**	**AN 1/80**

Segment: **REF** **Reference Identification**
Position: 027
Loop: REF Optional
Level: Heading:
Usage: Optional
Max Use: 1
Purpose: To specify identifying information
Syntax Notes: **1** At least one of REF02 or REF03 is required.
2 If either C04003 or C04004 is present, then the other is required.
3 If either C04005 or C04006 is present, then the other is required.
Semantic Notes: **1** REF04 contains data relating to the value cited in REF02.
Comments:
Notes: 1. This loop/segment does not apply with BIOGENIC SOURCE reporting.

2. This loop/segment provides the DARS data quality score associated with the data/inventory being reported within this transaction set.

3. Loop/Segment Example:

REF*D0**.025~
< DARS data quality score of .025 >

Data Element Summary

	Ref. Des.	Data Element	Name	Attr	
ibutes					
>>	**REF01**	**128**	**Reference Identification Qualifier** Code qualifying the Reference Identification 1. This element indicates the DARS data quality score associated with the data/inventory being reported within this transaction set. D0 Data Reliability Code	**M**	**ID 2/3**
	REF03	**352**	**Description** A free-form description to clarify the related data elements and their content 1. This element contains the value associated with REF01.	**X**	**AN 1/80**

Segment: **N1** **Name**
Position: 036
Loop: N1 Optional
Level: Heading:
Usage: Optional
Max Use: 1
Purpose: To identify a party by type of organization, name, and code
Syntax Notes:
1 At least one of N102 or N103 is required.
2 If either N103 or N104 is present, then the other is required.
Semantic Notes:
Comments:
1 This segment, used alone, provides the most efficient method of providing organizational identification. To obtain this efficiency the "ID Code" (N104) must provide a key to the table maintained by the transaction processing party.
2 N105 and N106 further define the type of entity in N101.

Notes:

1. This loop provides the following information:

- organization name
- location
- map coordinate
- contact data

2. This segment provides name of and location identification code for the location associated with data found throughout the transaction set.

3. This loop must be applied at least two (2) times for each transaction set: to provide the transmitting party (N101 is "RL") and the receiving party (N101 is "RC").

4. If a specific location is being provided (N101 is "7C"), this loop must be applied at least one (1) time for each set of geographic coordinates.

5. The information in N104 (location identification code) directly matches the information in the N104 contained within a specific HL loop at another level of this transaction set.

6. This note pertains to POINT SOURCE only. The use of the N1 loop allows the description of specific locations by site or emission release point.

7. This note pertains to AREA, NONROAD, MOBILE, and BIOGENIC SOURCES only. The use of the N1 loop allows the description of specific source locations.

8. Loop (segments N1, N2, N3, N4, REF, PER) Example:

N1*7C**93*12345~
REF*6E*03**LK:54:LQ:63~
< geographic data for a point at a longitude of 54 degrees and a latitude of 63 degrees referred to in HL5 - physical-level of the transaction set >

N1*RL*Smith, Jones, Johnson, Murphy, and Doe *1*123456789~

N3*P.O. Box 369*Main Street~
N4*Hometown*VT*36363*USA*RJ*I~
PER*P1*Carol Murphy*TE*800 333 3699*FX*669 333 3693~
< name and of the organization that is transmitting the transaction set and the name of the inventory preparer >

9. Segment Example:

N1*RL*Smith, Jones, Johnson, Murphy, and Doe *1*123456789~
< name and DUNS number an organization that is transmitting the transaction set >

Data Element Summary

Ref.	Data

	Des.	Element	Name	Attr	ibutes
>>	**N101**	**98**	**Entity Identifier Code**	**M**	**ID 2/3**

Code identifying an organizational entity, a physical location, property or an individual

1. Codes "FE" and "HA" apply with POINT SOURCE reporting only.

2. This element indicates the name of the location/party being transmitted with this iteration of the loop. Select one from the following list:

7C	Place of Occurrence
	Indicates the geographic location information associated with data contained at various levels within the transaction set
B4	Parent Company
	The organizational entity which, by virtue of organization, ownership, and/or management, exercises control over a subordinate but separate business entity
	Indicates the parent company of the location/party indicated as a site
C6	Municipality
	Indicates the municipality associated with the data related to the entire transaction set
FE	Mail Address
	Indicates the mailing address of the location/party indicated as a site 1. This code applies with POINT SOURCE reporting only.
HA	Owner
	Indicates the owner of the location/party indicated as a site 1. This code applies with POINT SOURCE reporting only.
JU	Jurisdiction
	Indicates the secondary jurisdiction agency associated with the data related to the entire transaction set
P1	Preparer
	The firm, organization, or individual who determines the tax liability from information supplied by the taxpayer
	Indicates the name of the firm (pertains to Point Source only), organization, or individual who prepares the inventory data for submission
RC	Receiving Location
	Indicates the party receiving the data within this transaction set

		RL	Reporting Location		
			Indicates the party responsible for the data within this transaction set		
		UX	Base Jurisdiction		
			Indicates the primary jurisdiction agency associated with the data related to the entire transaction set		
N102	**93**	**Name**		**X**	**AN 1/60**
		Free-form name			
		1. This element contains the entry associated with code specified in N101.			
N103	**66**	**Identification Code Qualifier**		**X**	**ID 1/2**
		Code designating the system/method of code structure used for Identification Code (67)			
		1. This element indicates the identification code associated with N102. Select one from the following list:			
		1	D-U-N-S Number, Dun & Bradstreet		
		93	Code assigned by the organization originating the transaction set		
			Indicates a code identifying a specific location associated with data found within this transaction set 1. When N101 is "7C", this code links data from other levels of this transaction set to the appropriate associated location.		
N104	**67**	**Identification Code**		**X**	**AN 2/80**
		Code identifying a party or other code			
		1. This element contains the value associated with the code specified in N103. 2. The information in this element directly matches the information in the N104 contained within a specific HL loop.			

Segment: **N2** **Additional Name Information**
Position: 039
Loop: N1 Optional
Level: Heading:
Usage: Optional
Max Use: 2
Purpose: To specify additional names or those longer than 35 characters in length
Syntax Notes:
Semantic Notes:
Comments:
Notes: 1. This segment provides additional characters to continue the location/party entry specified in N102 (prior segment).

2. Segment Example:

N2*Doe, CE~
< continuation of the name of an organization >

Data Element Summary

	Ref. Des.	Data Element	Name	Attr	
ibutes					
>>	**N201**	**93**	**Name** Free-form name 1. This element contains the organization name associated with the entry specified in N1 (prior segment).	**M**	**AN 1/60**
	N202	**93**	**Name** Free-form name	**O**	**AN 1/60**

Segment: **N3** **Address Information**
Position: 042
Loop: N1 Optional
Level: Heading:
Usage: Optional
Max Use: 2
Purpose: To specify the location of the named party
Syntax Notes:
Semantic Notes:
Comments:
Notes: 1. This segment provides the street address associated with entry specified in N1 (prior segment).

2. Segment Example:

N3*P.O. Box 369*Main Street~
< street address of an organization >

Data Element Summary

	Ref. Des.	Data Element	Name	Attr	
ibutes					
>>	**N301**	**166**	**Address Information** Address information 1. This element contains the mailing street address associated with the entry specified in N1 (prior segment).	**M**	**AN 1/55**
	N302	**166**	**Address Information** Address information	**O**	**AN 1/55**

Segment: **N4** **Geographic Location**
Position: 045
Loop: N1 Optional
Level: Heading:
Usage: Optional
Max Use: >1
Purpose: To specify the geographic place of the named party
Syntax Notes: **1** If N406 is present, then N405 is required.
Semantic Notes:
Comments: **1** A combination of either N401 through N404, or N405 and N406 may be adequate to specify a location.
2 N402 is required only if city name (N401) is in the U.S. or Canada.
Notes: 1. This segment provides the city, state, etc. information associated with the entry specified in N1 (prior segment).

2. Segment Example:

N4*Hometown*VT*36363*USA*RJ*I~
< city, state, zip code, country, location identifier, for a site in EPA Region I >

Data Element Summary

Ref. Des.	Data Element	Name	Attr	ibutes
N401	**19**	**City Name** Free-form text for city name 1. This element contains the mailing city associated with the entry specified in N1 (prior segment).	**O**	**AN 2/30**
N402	**156**	**State or Province Code** Code (Standard State/Province) as defined by appropriate government agency 1. This element contains the mailing state/province associated with the entry specified in N1 (prior segment).	**O**	**ID 2/2**
N403	**116**	**Postal Code** Code defining international postal zone code excluding punctuation and blanks (zip code for United States) 1. This element contains the mailing zip code associated with the entry specified in N1 (prior segment).	**O**	**ID 3/15**
N404	**26**	**Country Code** Code identifying the country 1. This element contains the mailing country associated with the entry specified in N1 (prior segment).	**O**	**ID 2/3**
N405	**309**	**Location Qualifier** Code identifying type of location 1. This element indicates a special designation code associated with the entry specified in N1 (prior segment). Select one from the following list:	**X**	**ID 1/2**

		FI	Federal Information Processing Standards (FIPS) 55 (Named Populated Places)
		MS	Metropolitan Sampling Area (MSA) Region Code
		RG	Region Code
			Qualifies a code that identifies a geographic area where transportation rates apply
			Indicates nonattainment area data 1. This code does not apply with BIOGENIC SOURCE reporting.
		RJ	Region
			Indicates an EPA Region (Regions I - X)

N406 **310** **Location Identifier** **O** **AN 1/30**

Code which identifies a specific location

1. This element does not apply with BIOGENIC SOURCE reporting.

2. This element contains the value associated with the code specified in N405.

3. When N405 is "RG", this element contains a nonattainment area code.

Select one from the following list:

03MOD	Ozone moderate
03OTR	Ozone Transport Region
CO	Carbon Monoxide
O3EXT	Ozone extreme
O3MAR	Ozone marginal
O3SER	Ozone serious
O3SEV1	Ozone severe 1
O3SEV2	Ozone severe 2
O3UNC	Ozone unclassified
PM10	Particulate Matter 10
PM25	Particulate Matter 2.5

Segment: **REF** **Reference Identification**
Position: 048
Loop: N1 Optional
Level: Heading:
Usage: Optional
Max Use: >1
Purpose: To specify identifying information
Syntax Notes: **1** At least one of REF02 or REF03 is required.
2 If either C04003 or C04004 is present, then the other is required.
3 If either C04005 or C04006 is present, then the other is required.
Semantic Notes: **1** REF04 contains data relating to the value cited in REF02.
Comments:
Notes: 1. This segment provides the map-specific information associated with the entry specified in N102 (prior segment).

2. When REF01 is "6E", the appropriate combinations of REF04 C04001, C04002, C04003, C04004, C04005, and C04006 must be applied.

3. Segment Example:

REF*6E*03**LK:54:LQ:63~
< geographic data for a point at a longitude of 63 degrees and a latitude of 54 degrees >

Data Element Summary

	Ref. Des.	Data Element	Name	Attr	
ibutes					
>>	**REF01**	**128**	**Reference Identification Qualifier** Code qualifying the Reference Identification 1. When "6E" is applied, the appropriate combinations of REF04 C04001, C04002, C04003, C04004, C04005, and C04006 must be applied. 2. This element indicates the type of map data associated with the entry specified in N102 (prior segment) being transmitted with this iteration of the loop. Select one from the following list: 6O Cross Reference Number AIRS Cross Reference Code ACC Status AIRS Status Code UU Township Number	**M**	**ID 2/3**
	REF02	**127**	**Reference Identification** Reference information as defined for a particular Transaction Set or as specified by the Reference Identification Qualifier	**X**	**AN 1/30**

1. This element contains the value associated with the code specified in REF01.

2. When REF01 is "6E", this element contains a map reference code. Select one from the following list:

01	Static Grid
	Indicates data related to a static grid that is specifically defined and unchanging with respect to its application
02	Line
03	Point
04	Polygon

REF03 352 Description X AN 1/80

A free-form description to clarify the related data elements and their content

1. This element only applies when REF01 is "6E" and REF02 is "01" or when REF01 is "WH".

2. When REF01 is "6E" and REF02 is "01", this element contains the naming convention used to identify a map reference.

3. When REF01 is "WH", this element contains the naming convention used to identify a highway link/Transportation Assessment Zone (TAZ).

REF04 C040 Reference Identifier O

To identify one or more reference numbers or identification numbers as specified by the Reference Qualifier

1. This composite only applies when REF01 is "6E".

2. When REF01 is "6E", this composite provides map coordinate data.

>> C04001 128 Reference Identification Qualifier M ID 2/3

Code qualifying the Reference Identification

1. This element indicates a vertically oriented map coordinate. Select one from the following list:

JN	Multiple Listing Service Map Y Coordinate
	1. When this code is applied, REF04 C04003 code "JM" must be applied.
LK	Longitude expressed in Degrees, Minutes and Seconds
	1. When this code is applied, REF04 C04003 code "LQ" must be applied.
XU	Universal Transverse Mercator - North
	1. When this code is applied, REF04 C04003 code "XV" must be applied and REF04 C04005 code "XW" may be applied.

>> C04002 127 Reference Identification M AN 1/30

Reference information as defined for a particular Transaction Set or as specified by the Reference Identification Qualifier

1. This element contains the map coordinate associated with the code specified in C04001.

C04003	**128**	**Reference Identification Qualifier**	**X**	**ID 2/3**

Code qualifying the Reference Identification

1. This element indicates a horizontally oriented map coordinate. Select one from the following list:

JM	Multiple Listing Service Map X Coordinate
	1. When this code is applied, REF04 C04001 code "JN" must be applied.
LQ	Latitude Expressed in Degrees, Minutes and Seconds
	1. When this code is applied, REF04 C04001 code "LK" must be applied.
XV	Universal Transverse Mercator - East
	1. When this code is applied, REF04 C04001 code "XU" must be applied and REF04 C04005 code "XW" may be applied.

C04004	**127**	**Reference Identification**	**X**	**AN 1/30**

Reference information as defined for a particular Transaction Set or as specified by the Reference Identification Qualifier

1. This element contains the map coordinate associated with the code specified in C04003.

C04005	**128**	**Reference Identification Qualifier**	**X**	**ID 2/3**

Code qualifying the Reference Identification

1. This element indicates a specific map zone.

XW	Universal Transverse Mercator - Zone
	1. When this code is applied, REF04 C04001 code "XU" must be applied and REF04 C04003 code "XV" must also be applied.

C04006	**127**	**Reference Identification**	**X**	**AN 1/30**

Reference information as defined for a particular Transaction Set or as specified by the Reference Identification Qualifier

1. This element contains the map zone associated with C04005.

Segment: **PER** **Administrative Communications Contact**
Position: 051
Loop: N1 Optional
Level: Heading:
Usage: Optional
Max Use: >1
Purpose: To identify a person or office to whom administrative communications should be directed
Syntax Notes: **1** If either PER03 or PER04 is present, then the other is required.
2 If either PER05 or PER06 is present, then the other is required.
3 If either PER07 or PER08 is present, then the other is required.
Semantic Notes:
Comments:
Notes: 1. This segment provides information associated with a contact person associated with the entry specified in N102 (prior segment).

2. There may be more than one contact per location. This segment must be applied one (1) time for each individual being reported.

3. The symbol "??" indicates a code value that is to be assigned in a future version/release of the X12 standard.

4. Segment Example:

PER*PI*Carol Murphy*TE*800 333 3699*FX*669 333 3693~
< name of a contact person with telephone and facsimile numbers >

Data Element Summary

	Ref. Des.	Data Element	Name	Attr	
ibutes					
>>	**PER01**	**366**	**Contact Function Code**	**M**	**ID 2/2**

Code identifying the major duty or responsibility of the person or group named

Corporate Contact
Firm Plant Contact
Inspection Contact
Permit Contact

1. This element indicates the scope of responsibility of contact person being reported as it pertains to this transaction set. Select one from the following list:

IF N101 = 'RL' and PER01 = 'SM'

PI	Preparer
	A firm, organization, or individual who determines the tax liability from information supplied by the taxpayer

		Indicates the name of the individual to be contacted regarding the data being reported		
		SM Submitting Contact		
PER02	**93**	**Name**	**O**	**AN 1/60**
		Free-form name		
		1. This element contains the entry associated with the code specified in PER01.		
PER03	**365**	**Communication Number Qualifier**	**X**	**ID 2/2**
		Code identifying the type of communication number		
		1. This element indicates a communication number associated with PER02. Select one from the following list:		
		AP Alternate Telephone		
		EM Electronic Mail		
		EX Telephone Extension		
		FX Facsimile		
		TE Telephone		
PER04	**364**	**Communication Number**	**X**	**AN 1/80**
		Complete communications number including country or area code when applicable		
		1. This element contains the value associated with the code specified in PER03.		
PER05	**365**	**Communication Number Qualifier**	**X**	**ID 2/2**
		Code identifying the type of communication number		
		1. This element indicates a second communication number associated with PER02. Select one from the following list:		
		AP Alternate Telephone		
		EM Electronic Mail		
		EX Telephone Extension		
		FX Facsimile		
		TE Telephone		
PER06	**364**	**Communication Number**	**X**	**AN 1/80**
		Complete communications number including country or area code when applicable		
		1. This element contains the value associated with the code specified in PER05.		

Segment: **HL** **Hierarchical Level**
Position: 003
Loop: HL Mandatory
Level: Detail:
Usage: Mandatory
Max Use: 1
Purpose: To identify dependencies among and the content of hierarchically related groups of data segments
Syntax Notes:
Semantic Notes:
Comments:

1 The HL segment is used to identify levels of detail information using a hierarchical structure, such as relating line-item data to shipment data, and packaging data to line-item data.
The HL segment defines a top-down/left-right ordered structure.

2 HL01 shall contain a unique alphanumeric number for each occurrence of the HL segment in the transaction set. For example, HL01 could be used to indicate the number of occurrences of the HL segment, in which case the value of HL01 would be "1" for the initial HL segment and would be incremented by one in each subsequent HL segment within the transaction.

3 HL02 identifies the hierarchical ID number of the HL segment to which the current HL segment is subordinate.

4 HL03 indicates the context of the series of segments following the current HL segment up to the next occurrence of an HL segment in the transaction. For example, HL03 is used to indicate that subsequent segments in the HL loop form a logical grouping of data referring to shipment, order, or item-level information.

5 HL04 indicates whether or not there are subordinate (or child) HL segments related to the current HL segment.

Notes:

1. This level/loop (HL4) provides site/source-level data, including:

- confidentiality indicator
- site identification information
- geographic location pointer
- general message
- site/source type
- Standard Industry Classification (SIC) code
- number of employees (point source only)
- map reference (area, nonroad, and biogenic source only)
- chemical mechanism data (biogenic only)
- chemical surrogate data (biogenic only)

2. This loop must be applied one (1) time for each site/source.

3. This note pertains to POINT SOURCE only. "Site" is used throughout this loop to indicate the source of an emission.

4. This note pertains to AREA, NONROAD, MOBILE, and BIOGENIC SOURCE only. "Source" is used throughout this loop to indicate the source of an emission.

5. Loop (segments HL, SPI, N1, MSG, REF, LX, MEA, REF, CID, TMD, MEA, REF) Example:

HL*01**4*1~
SPI*00*WF*X123**Steel production~
REF*06*01~
REF*IJ*33~
LX*1~
MEA*CT**500*IE~
< company sending non-classified information has a local identification number of X123, produces steel, is a point source with a SIC code of 33, and employs 500 people >

6. Segment Example:

HL*01**4*1~
< first HL loop iteration of this transaction set that contains site/source-level information and has subordinate loops >

Data Element Summary

	Ref. Des.	Data Element	Name	Attr	
ibutes					
>>	**HL01**	**628**	**Hierarchical ID Number**	**M**	**AN 1/12**
			A unique number assigned by the sender to identify a particular data segment in a hierarchical structure		
			1. This element contains a unique number used to identify the iteration of the HL loop.		

>>	**HL03**	**735**	**Hierarchical Level Code**	**M**	**ID 1/2**

Code defining the characteristic of a level in a hierarchical structure

1. This element indicates that this level of the transaction set contains site/source-level data.

4	Group

Code identifying a group of charges on the bill

Indicates site/source-level data

	HL04	**736**	**Hierarchical Child Code**	**O**	**ID 1/1**

Code indicating if there are hierarchical child data segments subordinate to the level being described

1	Additional Subordinate HL Data Segment in This Hierarchical Structure.

Segment: **SPI** **Specification Identifier**
Position: 006
Loop: SPI Optional
Level: Detail:
Usage: Optional
Max Use: 1
Purpose: To provide a description of the included specification or technical data items
Syntax Notes: **1** If either SPI02 or SPI03 is present, then the other is required.
Semantic Notes:
Comments:
Notes: 1. This segment does not apply with BIOGENIC SOURCE reporting.

2. This loop provides the following information:

- confidentiality indicator
- site identification information
- geographic location pointer
- general message

3. This segment provides the confidentiality indicator for site/source-level data and site identification information.

4. Loop (segments SPI, N1, MSG) Example:

SPI*00*WF*X123**Steel production~
N1*7C**93*123~
MSG*This is a new location.~
< company sending non-classified information has a local identification number of X123, a location fully detailed in the header, and a message indicating that the location is new >

5. Segment Example:

SPI*00*WF*X123**Steel production~
< company sending non-classified information has a local identification number of X123 and produces steel >

Data Element Summary

	Ref. Des.	Data Element	Name	Attr	ibutes
>>	**SPI01**	**786**	**Security Level Code** Code indicating the level of confidentiality assigned by the sender to the information following 1. This element contains the confidentiality indicator associated with the data in this loop/level. Select one from the following list:	**M**	**ID 2/2**

		00	Company Non-Classified		
		02	Company Confidential		
		90	Government Non-Classified		
		92	Government Confidential		
SPI02	**128**	**Reference Identification Qualifier**		**X**	**ID 2/3**
		Code qualifying the Reference Identification			
		1. Codes "IJ", "G5", and "PE" apply with POINT SOURCE reporting only. 2. This element indicates the type of site/source identifier information being reported with this iteration of the loop. Select one from the following list:			
		1J	Facility ID Number		
			Indicates the Federal key identifier code for a site 1. This code applies with POINT SOURCE reporting only.		
		G5	Provider Site Number		
			A unique code identifying the provider's specific department or office location for internal routing of electronic claims		
			Indicates the state identification code/description for a site 1. This code applies with POINT SOURCE reporting only.		
		IX	Item Number		
			Indicates comments for a site/source		
		PE	Plant Number		
			Indicates the Federal identification code for a site description 1. This code applies with POINT SOURCE reporting only.		
		WF	Locally Assigned Control Number		
			Indicates the local identification code/description for a site/source		
		ZZ	Mutually Defined		
			Indicates the Office of Regulatory Information Systems (ORIS) utility plant code		
SPI03	**127**	**Reference Identification**		**X**	**AN 1/30**
		Reference information as defined for a particular Transaction Set or as specified by the Reference Identification Qualifier			

		1. When SPI02 is "IJ" or "PE", this element contains the appropriate code value. 2. When SPI02 is "IX", this element contains a number associated with a specific entry in SPI05. 3. When SPI02 is "G5" or "WF", this element may contain either a number associated with a specific entry in SPI05, or the appropriate code value.		
SPI05	**791**	**Entity Purpose** The reason for the existence of the data item specified by the electronic data item independent of its presence in an EDI transaction 1. When SPI02 is "G5", "IX", or "WF", this element contains the entry associated with the identification number in SPI03.	**O**	**AN 1/80**

Segment: **MSG** **Message Text**
Position: 027
Loop: SPI Optional
Level: Detail:
Usage: Optional
Max Use: >1
Purpose: To provide a free-form format that allows the transmission of text information
Syntax Notes: **1** If MSG03 is present, then MSG02 is required.
Semantic Notes: **1** MSG03 is the number of lines to advance before printing.
Comments: **1** MSG02 is not related to the specific characteristics of a printer, but identifies top of page, advance a line, etc.
2 If MSG02 is "AA - Advance the specified number of lines before print" then MSG03 is required.
Notes: 1. This segment provides a site/source-level message.

2. Segment Example:

MSG*This is a new location.~
< message indicating that the location is new >

Data Element Summary

	Ref. Des.	Data Element	Name	Attr	ibutes
>>	**MSG01**	**933**	**Free-Form Message Text** Free-form message text	**M**	**AN 1/264**

Segment: **N1** **Name**
Position: 030
Loop: N1 Optional
Level: Detail:
Usage: Optional
Max Use: 1
Purpose: To identify a party by type of organization, name, and code
Syntax Notes:
1 At least one of N102 or N103 is required.
2 If either N103 or N104 is present, then the other is required.
Semantic Notes:
Comments:
1 This segment, used alone, provides the most efficient method of providing organizational identification. To obtain this efficiency the "ID Code" (N104) must provide a key to the table maintained by the transaction processing party.
2 N105 and N106 further define the type of entity in N101.

Notes:

1. This loop provides the following information:

-organization name
-location
-map coordinate
-contact data

2. This segment provides name of and location identification code for the location associated with data found throughout the transaction set.

3. This loop must be applied at least two (2) times for each transaction set: to provide the transmitting party (N101 is "RL") and the receiving party (N101 is "RC").

4. If a specific location is being provided (N101 is "7C"), this loop must be applied at least one (1) time for each set of geographic coordinates.

5. The information in N104 (location identification code) directly matches the information in the N104 contained within a specific HL loop at another level of this transaction set.

6. This note pertains to POINT SOURCE only. The use of the N1 loop allows the description of specific locations by site or emission release point.

7. This note pertains to AREA, NONROAD, MOBILE, and BIOGENIC SOURCESonly. The use of the N1 loop allows the description of specific source locations.

8. Loop(segments N1, N2, N3, N4, REF, PER) Example:

N1*7C**93*12345~
REF*6E*03**LK:54:LQ:63~
<geographic data for a point at a longitude of 54 degrees and a latitude of 63 degrees referred to in HL5 - physical-level of the transaction set>

N1*RL*Smith, Jones Jonhson, Murphy, and Doe *1*23456759~
N3*P.O. Box 369*Main Street~
N4*Hometown*VT*36363*USA*RJ*I~
PER*P1*Carol Murphy*TE*800 333 3699*FX*669 333 3693~
<name and of the organization that is transmitting the transaction set and the name of the inventory preparer>

9. Segment Example:

N1*RL*Smith, Jones, Johnson, Murphy, and Doe *1*123456789~
<name and DUNS number an organization that is transmitting the transaction set>

Data Element Summary

Ref.	Data

	Des.	Element	Name	Attr	ibutes
>>	**N101**	**98**	**Entity Identifier Code**	**M**	**ID 2/3**

Code identifying an organizational entity, a physical location, property or an individual

1. Codes "FE" and "HA" apply with POINT SOURCE reporting only.

2. This element indicates the name of the location/party being transmitted with this iteration of the loop. Select one from the following list:

7C	Place of Occurrence
	Indicates the geographic location information associated with data contained at various levels within the transaction set
B4	Parent Company
	The organizational entity which, by virtue of organization, ownership, and/or management, exercises control over a subordinate but separate business entity
	Indicates the parent company of the location/party indicated as a site
C6	Municipality
	Indicates the municipality associated with the data related to the entire transaction set
FE	Mail Address
	Indicates the mailing address of the location/party indicated as a site 1. This code applies with POINT SOURCE reporting only.
HA	Owner
	Indicates the owner of the location/party indicated as a site 1. This code applies with POINT SOURCE reporting only.
JU	Jurisdiction
	Indicates the secondary jurisdiction agency associated with the data related to the entire transaction set
P1	Preparer
	The firm, organization, or individual who determines the tax liability from information supplied by the taxpayer
	Indicates the name of the firm (pertains to Point Source only), organization, or individual who prepares the inventory data for submission
RC	Receiving Location
	Indicates the party responsible for the data within this transaction set

		RL	Reporting Location		
		UX	Base Jurisdiction		
			Indicates the primary jurisdiction agency associated with the data related to the entire transaction set		
N102	**93**	**Name**		**X**	**AN 1/60**
		Free-form name			
		1. This element contains the entry associated with code specified in N101.			
N103	**66**	**Identification Code Qualifier**		**X**	**ID 1/2**
		Code designating the system/method of code structure used for Identification Code (67)			
		1. This element indicates the identification code associated with N102. Select one from the following list:			
		1	D-U-N-S Number, Dun & Bradstreet		
		93	Code assigned by the organization originating the transaction set		
			Indicates a code identifying a specific location associated with data found within this transaction set 1. When N101 is "7C", this code links data from other levels of this transaction set to the appropriate associated location.		
N104	**67**	**Identification Code**		**X**	**AN 2/80**
		Code identifying a party or other code			
		1. This element contains the value associated with the code specified in N103. 2. The information in this element directly matches the information in the N104 contained within a specific HL loop.			

Segment: **N2** **Additional Name Information**
Position: 033
Loop: N1 Optional
Level: Detail:
Usage: Optional
Max Use: 2
Purpose: To specify additional names or those longer than 35 characters in length
Syntax Notes:
Semantic Notes:
Comments:
Notes: 1. This segment provides additional characters to continue the location/party entry specified in N102 (prior segment).

2. Segment Example:

N2*Doe, CE~
<continuation of the name of an organization>

Data Element Summary

	Ref. Des.	Data Element	Name	Attr	ibutes
>>	**N201**	**93**	**Name** Free-form name	**M**	**AN 1/60**
	N202	**93**	**Name** Free-form name	**O**	**AN 1/60**

Segment: **N3** **Address Information**
Position: 036
Loop: N1 Optional
Level: Detail:
Usage: Optional
Max Use: 2
Purpose: To specify the location of the named party
Syntax Notes:
Semantic Notes:
Comments:
Notes: 1. This segment provides the street address associated with entry specified in N1 (prior segment).

2. Segment Example:

N3*P.O. Box 369*Main Street~
<street address of an organization>

Data Element Summary

	Ref. Des.	Data Element	Name	Attr	ibutes
>>	**N301**	**166**	**Address Information** Address information	**M**	**AN 1/55**
	N302	**166**	**Address Information** Address information	**O**	**AN 1/55**

Segment: **N4** **Geographic Location**
Position: 039
Loop: N1 Optional
Level: Detail:
Usage: Optional
Max Use: >1
Purpose: To specify the geographic place of the named party
Syntax Notes: **1** If N406 is present, then N405 is required.
Semantic Notes:
Comments: **1** A combination of either N401 through N404, or N405 and N406 may be adequate to specify a location.
2 N402 is required only if city name (N401) is in the U.S. or Canada.
Notes: 1. This segment provides the city, state, etc. information associated with the entry specified in N1(prior segment).

2. Segment Example:

N4*Hometown*VT*36363*USA*RJ*I~
<city, state, zip code, country, location identifier, for a site in EPA Region I>

Data Element Summary

Ref. Des.	Data Element	Name	Attr	ibutes
N401	**19**	**City Name** Free-form text for city name 1. This element contains the city associated with the entry specified in N1 (prior segment).	**O**	**AN 2/30**
N402	**156**	**State or Province Code** Code (Standard State/Province) as defined by appropriate government agency 1. This element cotains the zip code associated with the entry specified in N1 (prior segment).	**O**	**ID 2/2**
N403	**116**	**Postal Code** Code defining international postal zone code excluding punctuation and blanks (zip code for United States) 1. This element contains the zip code associated with entry specified in N1(prior segment).	**O**	**ID 3/15**
N404	**26**	**Country Code** Code identifying the country 1. This element contains the country associated with entry specified in N1(prior segment).	**O**	**ID 2/3**
N405	**309**	**Location Qualifier** Code identifying type of location 1. This element indicates a special designation code associated with the entry specified in N1(prior segment). Select one from the following list:	**X**	**ID 1/2**

FI	Federal Information Processing Standards (FIPS) 55 (Named Populated Places)
MS	Metropolitan Sampling Area (MSA) Region Code
RG	Region Code

Qualifies a code that identifies a geographic area where transportation rates apply

Indicates nonattainment area data

1. This code does not apply with BIOGENIC SOURCE reporting.

RJ	Region

Indicates an EPA Region (Regions I - X)

N406 310 Location Identifier O AN 1/30

Code which identifies a specific location

1. This element does not apply with BIOGENIC SOURCE reporting.

2. This element contains the value associated with the code specified in N405.

3. When N405 is "RG", this element contains a nonattainment area code.

Select one from the following list:

03MOD	Ozone moderate
03OTR	Ozone Transport Region
CO	Carbon Monoxide
O3EXT	Ozone extreme
O3MAR	Ozone marginal
O3SER	Ozone serious
O3SEV1	Ozone severe 1
O3SEV2	Ozone severe 2
O3UNC	Ozone unclassified
PM10	Particulate Matter 10
PM25	Particulate Matter 2.5

Segment: **REF** **Reference Identification**
Position: 075
Loop: REF Optional
Level: Detail:
Usage: Optional
Max Use: 1
Purpose: To specify identifying information
Syntax Notes: **1** At least one of REF02 or REF03 is required.
2 If either C04003 or C04004 is present, then the other is required.
3 If either C04005 or C04006 is present, then the other is required.
Semantic Notes: **1** REF04 contains data relating to the value cited in REF02.
Comments:
Notes: 1. This loop/segment provides site/source type information and Standard Industry Classification (SIC) codes.

2. Loop/Segment Example:

REF*06*01~
< source type that is a point source >

REF*06*04**T7:VEG~
< source type that is a biogenic source with a source category of vegetation >

Data Element Summary

	Ref. Des.	Data Element	Name	Attr	
ibutes					
>>	**REF01**	**128**	**Reference Identification Qualifier** Code qualifying the Reference Identification 1. This element indicates the type of information being reported with this iteration of the loop. Select one from the following list: 06 System Number A unique number assigned by the manufacturer to identify the initial computer system sold to the customer Indicates the source type to which the data pertains ACC Status IJ Standard Industry Classification (SIC) Code	**M**	**ID 2/3**
	REF02	**127**	**Reference Identification** Reference information as defined for a particular Transaction Set or as specified by the Reference Identification Qualifier 1. This element contains the value associated with the code specified in REF01. 2. When REF01 is "06", this element contains the source type code. Select one from the following list:	**X**	**AN 1/30**

			01	Point Source		
			02	Area Source		
			03	Mobile Source		
			04	Biogenic Source		
			05	Nonroad Engines and Vehicles Source		
	REF04	**C040**	**Reference Identifier**		**O**	
			To identify one or more reference numbers or identification numbers as specified by the Reference Qualifier			
			1. This composite is applied with BIOGENIC SOURCE reporting only. 2. This composite is only applied when REF02 is "04". 3. When REF02 is "04", this composite provides a biogenic source category.			
>>	**C04001**	**128**	**Reference Identification Qualifier**		**M**	**ID 2/3**
			Code qualifying the Reference Identification			
			1. This element indicates a biogenic source category.			
			T7	Affected Subsystem Code		
				Indicates a biogenic source category		
>>	**C04002**	**127**	**Reference Identification**		**M**	**AN 1/30**
			Reference information as defined for a particular Transaction Set or as specified by the Reference Identification Qualifier			
			1. This element contains the code associated with C04001. Select one from the following list:			
			GEO	Geogenic		
			LIGHT	Lightning		
			SOIL	Soil		
			VEG	Vegetation		

Segment: **LX** **Assigned Number**
Position: 084
Loop: LX Optional
Level: Detail:
Usage: Optional
Max Use: 1
Purpose: To reference a line number in a transaction set
Syntax Notes:
Semantic Notes:
Comments:
Notes: 1. This loop/segment is applied with POINT, AREA, NONROAD, and BIOGENIC SOURCE reporting only.

2. This loop provides the following information:

- number of employees (point source only)
- map reference (area, nonroad, and biogenic source only)

3. This segment is an X12 syntactical requirement only.

4. Loop (segments LX, MEA, REF) Example:

LX*01~
MEA*CT**500*IE~
< 500 persons (employees) >

LX*01~
MEA*PO*HT*10*DD~
MEA*PO*WD*15*DD~
REF*6E*01**LK:54:LQ:63~
< biogenic dynamic grid reference with a grid start point at 54 degrees longitude and 63 degrees latitude and a grid measurement of 10 degrees along the Y axis and 15 degrees along the X axis >

5. Segment Example:

LX*01~
< first iteration of this LX loop within this transaction set >

Data Element Summary

	Ref. Des.	Data Element	Name	Attributes	
>>	**LX01**	**554**	**Assigned Number** Number assigned for differentiation within a transaction set	**M**	**N0 1/6**

Segment: **MEA** **Measurements**
Position: 093
Loop: LX Optional
Level: Detail:
Usage: Mandatory
Max Use: >1
Purpose: To specify physical measurements or counts, including dimensions, tolerances, variances, and weights (See Figures Appendix for example of use of C001)
Syntax Notes:
1 At least one of MEA03 MEA05 MEA06 or MEA08 is required.
2 If MEA05 is present, then MEA04 is required.
3 If MEA06 is present, then MEA04 is required.
4 If MEA07 is present, then at least one of MEA03 MEA05 or MEA06 is required.
5 Only one of MEA08 or MEA03 may be present.
Semantic Notes:
1 MEA04 defines the unit of measure for MEA03, MEA05, and MEA06.
Comments:
1 When citing dimensional tolerances, any measurement requiring a sign (+ or -), or any measurement where a positive (+) value cannot be assumed, use MEA05 as the negative (-) value and MEA06 as the positive (+) value.
Notes:
1. This segment is applied with POINT, AREA, NONROAD, and BIOGENIC SOURCE reporting only.

2. This note pertains to POINT SOURCE only. This segment provides the number of employees for the site.

3. This note pertains to AREA, NONROAD, and BIOGENIC SOURCE only. This segment provides map reference data for dynamic grids.

4. Segment Example:

MEA*CT**500*IE~
< 500 persons (employees) >

MEA*PO*HT*10*DD~
MEA*PO*WD*15*DD~
< biogenic dynamic grid reference with a grid measurement of 10 degrees along the Y axis and 15 degrees along the X axis >

Data Element Summary

Ref. Des.	Data Element	Name	Attr	ibutes
MEA01	**737**	**Measurement Reference ID Code**	**O**	**ID 2/2**

Code identifying the broad category to which a measurement applies

1. This segment indicates the type of information being reported with this iteration of the loop. Select one from the following list:

CT	Counts
	Indicates the number of employees at a site 1. This code is applied to POINT SOURCE reporting only.
PO	Position
	Indicates data related to a dynamic grid which has a changeable definition and changes with respect to its application 1. This code is applied to AREA, NONROAD, and BIOGENIC SOURCE reporting only.

MEA02 738 Measurement Qualifier O ID 1/3

Code identifying a specific product or process characteristic to which a measurement applies

1. This element is applied with AREA, NONROAD, and BIOGENIC SOURCE reporting only.

2. When MEA01 is "PO", this element indicates the direction associated with a map reference measurement. Select one from the following list:

3. When MEA02 = ELE or GLE or F5 and MEA04(C0101) = 'FT'; IF HL03 = '4'

F5	Ground Elevation
GLE	Ground Level Elevation
	The distance above sea level at a drilling site
HT	Height
	Corresponds with the Y axis
WD	Width
	Corresponds with the X axis

MEA03 739 Measurement Value X R 1/20

The value of the measurement

1. This note pertains to POINT SOURCE only. This element contains the value associated with MEA01.

2. This note pertains to AREA, NONROAD, and BIOGENIC SOURCE only. This element contains the value associated with MEA02.

MEA04 C001 Composite Unit of Measure X

To identify a composite unit of measure (See Figures Appendix for examples of use)

1. This composite provides the unit of measure associated with MEA03.

>> **C00101** **355** **Unit or Basis for Measurement Code** **M** **ID 2/2**

Code specifying the units in which a value is being expressed, or manner in which a measurement has been taken

1. Code "IE" applies with POINT SOURCE reporting only.

2. This element contains the unit of measure associated with MEA03. Select one from the following list:

03	Seconds
DD	Degree
DH	Miles
DK	Kilometers
EA	Each
	Indicates one (1) cell in a dynamic grid
FT	Foot
IE	Person
	Indicates the number of employees 1. This code is applied with POINT SOURCE reporting only.
MJ	Minutes

Segment: **REF** **Reference Identification**
Position: 105
Loop: LX Optional
Level: Detail:
Usage: Optional
Max Use: >1
Purpose: To specify identifying information
Syntax Notes: **1** At least one of REF02 or REF03 is required.
2 If either C04003 or C04004 is present, then the other is required.
3 If either C04005 or C04006 is present, then the other is required.
Semantic Notes: **1** REF04 contains data relating to the value cited in REF02.
Comments:
Notes: 1. This segment applies with AREA, NONROAD, and BIOGENIC SOURCE reporting only.

2. This segment provides map reference data (grid start point) and projection system name associated with dynamic grids as specified in the MEA01 (prior segment) code is "PO".

3. When REF01 is "6E", the appropriate combinations of REF04 C04001, C04002, C04003, C04004, C04005, and C04006 must be applied.

4. Segment Example:

REF*6E*01**LK:54:LQ:63~
< biogenic dynamic grid reference with a grid start point at 54 degrees longitude and 63 degrees latitude >

Data Element Summary

	Ref. Des.	Data Element	Name	Attr	
ibutes					
>>	**REF01**	**128**	**Reference Identification Qualifier** Code qualifying the Reference Identification 1. This element indicates map reference data. 2. When "6E" is applied, the appropriate combinations of REF04 C04001, C04002, C04003, C04004, C04005, and C04006 must be applied. 6E Map Reference	**M**	**ID 2/3**
	REF02	**127**	**Reference Identification** Reference information as defined for a particular Transaction Set or as specified by the Reference Identification Qualifier 1. This element contains the value associated with REF01. 01 Dynamic Grid	**X**	**AN 1/30**

				Indicates data related to a dynamic grid which has a changeable definition and changes with respect to its application		
			02	Projection System Name		
	REF03	**352**	**Description**		**X**	**AN 1/80**
			A free-form description to clarify the related data elements and their content			
			1. This element contains the naming convention associated with the code specified in REF02.			
	REF04	**C040**	**Reference Identifier**		**O**	
			To identify one or more reference numbers or identification numbers as specified by the Reference Qualifier			
			1. This composite is only applied when REF02 is "01". 2. This composite provides map coordinate data associated with REF01.			
>>	**C04001**	**128**	**Reference Identification Qualifier**		**M**	**ID 2/3**
			Code qualifying the Reference Identification			
			1. This element indicates a vertically oriented map coordinate.			
			JN	Multiple Listing Service Map Y Coordinate		
				1. When this code is applied, REF04 C04003 code "JM" must be applied.		
			LK	Longitude expressed in Degrees, Minutes and Seconds		
				1. When this code is applied, REF04 C04003 code "LQ" must be applied.		
			XU	Universal Transverse Mercator - North		
				1. When this code is applied, REF04 C04003 code "XV" must be applied and REF04 C04005 code "XW" may be applied.		
>>	**C04002**	**127**	**Reference Identification**		**M**	**AN 1/30**
			Reference information as defined for a particular Transaction Set or as specified by the Reference Identification Qualifier			
			1. This element contains the map coordinate associated with the code specified in C04001.			
	C04003	**128**	**Reference Identification Qualifier**		**X**	**ID 2/3**
			Code qualifying the Reference Identification			
			1. This element indicates a horizontally oriented map coordinate.			
			JM	Multiple Listing Service Map X Coordinate		
				1. When this code is applied, REF04 C04001 code "JN" must be applied.		
			LQ	Latitude Expressed in Degrees, Minutes and Seconds		
				1. When this code is applied, REF04 C04001 code "LK" must be applied.		
			XV	Universal Transverse Mercator - East		
				1. When this code is applied, REF04 C04001 code "XU" must be applied and REF04 C04005 code "XW" may be applied.		

C04004	**127**	**Reference Identification**	**X**	**AN 1/30**

Reference information as defined for a particular Transaction Set or as specified by the Reference Identification Qualifier

1. This element contains the map coordinate associated with the code specified in C04003.

C04005	**128**	**Reference Identification Qualifier**	**X**	**ID 2/3**

Code qualifying the Reference Identification

1. This element indicates a specific map zone.

XW	Universal Transverse Mercator - Zone

1. When this code is applied, REF04 C04001 code "XU" must be applied and REF04 C04003 code "XV" must also be applied.

C04006	**127**	**Reference Identification**	**X**	**AN 1/30**

Reference information as defined for a particular Transaction Set or as specified by the Reference Identification Qualifier

1. This element contains the map zone associated with C04005.

Segment: **CID** **Characteristic/Class ID**
Position: 114
Loop: CID Optional
Level: Detail:
Usage: Optional
Max Use: 1
Purpose: To specify the general class or specific characteristic upon which test results are being reported or are to be taken
Syntax Notes:
1 At least one of CID01 CID02 CID04 or CID05 is required.
2 If either CID03 or CID04 is present, then the other is required.
3 If CID06 is present, then both CID03 and CID04 are required.
4 If CID07 is present, then at least one of CID04 or CID05 is required.
Semantic Notes:
Comments:
1 CID06 specifies the individual code list of the agency specified in CID03.
2 CID07 refers to whether or not the characteristic identified in CID04 or CID05 or both is affected by the product change. If it is affected, the value is "Y". A value of "N" is used when it is known that it will not be affected. Any other value indicates it is indeterminate.

Notes:

1. This loop/segment applies with BIOGENIC SOURCE reporting only.

2. This loop provides the following information:

- chemical mechanism data
- chemical surrogate data

3. This segment provides major classes for chemical mechanisms.

4. Loop (segments CID, TMD, MEA, REF) Example:

CID***EP*VOC~
TMD*OC*EP****EPA model~
MEA***33*UN~
REF*I9**Vinyl Chloride~
< volatile organic compound speciation data based on an EPA model specifically identifying Vinyl Chloride at 33 units >

5. Segment Example:

CID***EP*VOC~
< volatile organic compound speciation data, where VOC is selected from a speciation list maintained by the EPA >

Data Element Summary

Ref. Des.	Data Element	Name	Attributes

CID03	**559**	**Agency Qualifier Code**	**X**	**ID 2/2**

Code identifying the agency assigning the code values

1. This element identifies the agency maintaining the code values applied with this segment.

EP	United States Environmental Protection Agency (EPA)

CID04	**751**	**Product Description Code**	**X**	**AN 1/12**

A code from an industry code list which provides specific data about a product characteristic

1. This element indicates the major class of chemical mechanism being reported.

MONO	Monoterpines
OVOC	Other Volatile Organic Compounds
VOC	Volatile Organic Compounds

CID05	**352**	**Description**	**X**	**AN 1/80**

A free-form description to clarify the related data elements and their content

1. This element contains a description of any major chemical mechanism not supplied in CID04.

Segment: **TMD** **Test Method**
Position: 120
Loop: CID Optional
Level: Detail:
Usage: Optional
Max Use: >1
Purpose: To describe the nature of the test performed
Syntax Notes: **1** If either TMD02 or TMD03 is present, then the other is required.
2 If TMD09 is present, then TMD02 is required.
Semantic Notes: **1** TMD07 is the date of the test method as assigned by the issuing organization.
2 TMD08 is the document revision number.
Comments: **1** TMD09 specifies the individual code list of the agency specified in TMD02.
Notes: 1. This segment applies with BIOGENIC SOURCE reporting only.

2. This segment provides chemical mechanism version information associated with the chemical mechanism information specified in the CID segment (prior segment).

3. Segment Example:

TMD*OC****EPA model~
< chemical mechanism/speciation data based on an EPA model where the selection of EPA model is obtained from a list maintained by the EPA >

Data Element Summary

Ref. Des.	Data Element	Name	Attr	ibutes
TMD01	**750**	**Product/Process Characteristic Code** Code identifying the general class of a product or process characteristic 1. This element indicates the version of the chemical mechanism information being provided. OC Options Details value added characteristics of a vehicle Indicates the version of the chemical mechanism	**O** **ID 2/3**	
TMD02	**559**	**Agency Qualifier Code** Code identifying the agency assigning the code values EP United States Environmental Protection Agency (EPA)	**X** **ID 2/2**	
TMD06	**352**	**Description** A free-form description to clarify the related data elements and their content 1. This element contains a textual description of the information associated with TMD01.	**O** **AN 1/80**	

Segment: **MEA** **Measurements**
Position: 135
Loop: MEA Optional
Level: Detail:
Usage: Optional
Max Use: 1
Purpose: To specify physical measurements or counts, including dimensions, tolerances, variances, and weights (See Figures Appendix for example of use of C001)
Syntax Notes:
1 At least one of MEA03 MEA05 MEA06 or MEA08 is required.
2 If MEA05 is present, then MEA04 is required.
3 If MEA06 is present, then MEA04 is required.
4 If MEA07 is present, then at least one of MEA03 MEA05 or MEA06 is required.
5 Only one of MEA08 or MEA03 may be present.
Semantic Notes:
1 MEA04 defines the unit of measure for MEA03, MEA05, and MEA06.
Comments:
1 When citing dimensional tolerances, any measurement requiring a sign (+ or -), or any measurement where a positive (+) value cannot be assumed, use MEA05 as the negative (-) value and MEA06 as the positive (+) value.
Notes:
1. This loop/segment applies with BIOGENIC SOURCE reporting only.

2. This loop provides chemical surrogate data

3. This segment provides chemical surrogate values associated with the chemical surrogate information specified in the REF segment (following segment).

4. Loop (segments MEA, REF) Example:

MEA***33*UN~
REF*I9**Vinyl Chloride~
< chemical surrogate Vinyl Chloride has a value of 33 units as it is associated with a specific chemical speciation model >

4. Segment Example:

MEA***33*UN~
< chemical surrogate associated with a chemical speciation model with a value of 33 units >

Data Element Summary

Ref. Des.	Data Element	Name	Attributes

	MEA03	**739**	**Measurement Value**	**X**	**R**	**1/20**
			The value of the measurement			
			1. This element contains the value associated with REF03 (following segment).			
	MEA04	**C001**	**Composite Unit of Measure**	**X**		
			To identify a composite unit of measure (See Figures Appendix for examples of use)			
			1. This composite provides the unit of measure associated with MEA03.			
>>	**C00101**	**355**	**Unit or Basis for Measurement Code**	**M**	**ID**	**2/2**
			Code specifying the units in which a value is being expressed, or manner in which a measurement has been taken			
			1. This element provides the unit of measure associated with MEA03.			
			UN Unit			

Segment: **REF** **Reference Identification**
Position: 141
Loop: MEA Optional
Level: Detail:
Usage: Optional
Max Use: >1
Purpose: To specify identifying information
Syntax Notes: **1** At least one of REF02 or REF03 is required.
2 If either C04003 or C04004 is present, then the other is required.
3 If either C04005 or C04006 is present, then the other is required.
Semantic Notes: **1** REF04 contains data relating to the value cited in REF02.
Comments:
Notes: 1. This segment applies with BIOGENIC SOURCE reporting only.

2. This segment provides chemical surrogate classes associated with the chemical mechanism information specified in the CID segment (prior segment).

3. Segment Example:

REF*I9**Vinyl Chloride~
< chemical surrogate Vinyl Chloride >

Data Element Summary

	Ref. Des.	Data Element	Name	Attr	
ibutes					
>>	**REF01**	**128**	**Reference Identification Qualifier** Code qualifying the Reference Identification 1. This element indicates a pollutant code identifying a chemical surrogate. I9 Pollutant	**M**	**ID 2/3**
	REF03	**352**	**Description** A free-form description to clarify the related data elements and their content 1. This element contains a textual name/description or pollutant code associated with REF01.	**X**	**AN 1/80**

Segment: **HL** **Hierarchical Level**
Position: 177
Loop: HL Mandatory
Level: Detail:
Usage: Mandatory
Max Use: 1
Purpose: To identify dependencies among and the content of hierarchically related groups of data segments
Syntax Notes:
Semantic Notes:
Comments:

1 The HL segment is used to identify levels of detail information using a hierarchical structure, such as relating line-item data to shipment data, and packaging data to line-item data.
The HL segment defines a top-down/left-right ordered structure.

2 HL01 shall contain a unique alphanumeric number for each occurrence of the HL segment in the transaction set. For example, HL01 could be used to indicate the number of occurrences of the HL segment, in which case the value of HL01 would be "1" for the initial HL segment and would be incremented by one in each subsequent HL segment within the transaction.

3 HL02 identifies the hierarchical ID number of the HL segment to which the current HL segment is subordinate.

4 HL03 indicates the context of the series of segments following the current HL segment up to the next occurrence of an HL segment in the transaction. For example, HL03 is used to indicate that subsequent segments in the HL loop form a logical grouping of data referring to shipment, order, or item-level information.

5 HL04 indicates whether or not there are subordinate (or child) HL segments related to the current HL segment.

Notes:

1. This level/loop (HL5) provides physical-level data, including:

- confidentiality indicator
- physical unit identification information
- geographic location pointer
- physical-level message
- physical unit type
- emission unit (point source only)
- emission release point (point source only)
- control equipment physical parameter data (point, area, and nonroad source only)
- grid/county area data (biogenic source only)
- pollution-specific control unit information (point source only)
- control unit characteristics (point, area, and nonroad source only)
- physical unit operational status (point source only)
- emission path data (point, area, and nonroad source only)

2. This loop must be applied one (1) time for each physical unit.

3. This note pertains to POINT SOURCE only. Examples of physical-level data are emission release point, control device, emission unit, etc.

4. This note pertains to AREA, NONROAD, MOBILE, AND BIOGENIC SOURCE only. Examples of physical-level data are geographic subdivision (grid cell), county, subcounty, highway link, etc.

5. Loop (segments HL, SPI, N1, MSG, PID, MEA, LX, LIN, MEA, DTM, REF) Example:

HL*02*01*5*1~
SPI*00*G5*PA123**Brick 43~
N1*7C**93*PA123~
PID*X*PP*EP*01*Brick~
MEA*PD*5F*43*FT~
LX*01~
LIN**CO*123456~
MEA**COT*90*P1~
DTM*196*19980601~
REF*ACC*A~
< information that is non-classified, is associated with a brick stack that is identified with a state code of PA123, is described as being Brick 43, is located at a point defined in the header, and is 43 feet in height above the ground; an associated pollutant with a CAS number of 123456 that is controlled with 90 percent efficiency for the time period starting June 1, 1998 by a unit that was operational during that same period >

6. Segment Example:

HL*02*01*5*1~
< second HL loop iteration that is subordinate to the first HL loop of this transaction set

Data Element Summary

	Ref. Des.	Data Element	Name	Attr	ibutes
>>	**HL01**	**628**	**Hierarchical ID Number** A unique number assigned by the sender to identify a particular data segment in a hierarchical structure 1. This element contains a unique number used to identify the iteration of an HL loop.	**M**	**AN 1/12**
	HL02	**734**	**Hierarchical Parent ID Number** Identification number of the next higher hierarchical data segment that the data segment being described is subordinate to 1. This element indicates that this level of the transaction set points to the HL loop parent containing the HL03 code "4" for site/source-level data.	**O**	**AN 1/12**
>>	**HL03**	**735**	**Hierarchical Level Code** Code defining the characteristic of a level in a hierarchical structure 1. This element indicates that this level of the transaction set contains physical-level data. 5 Category Code identifying the sub-division of the group Indicates physical-level data	**M**	**ID 1/2**
	HL04	**736**	**Hierarchical Child Code** Code indicating if there are hierarchical child data segments subordinate to the level being described 1 Additional Subordinate HL Data Segment in This Hierarchical Structure.	**O**	**ID 1/1**

Segment: **SPI** **Specification Identifier**
Position: 180
Loop: SPI Optional
Level: Detail:
Usage: Optional
Max Use: 1
Purpose: To provide a description of the included specification or technical data items
Syntax Notes: **1** If either SPI02 or SPI03 is present, then the other is required.
Semantic Notes:
Comments:
Notes: 1. This loop provides the following information:

- confidentiality indicator
- physical unit identification information
- geographic location pointer
- physical-level message

2. This segment provides the confidentiality indicator for physical-level data and physical unit identification information.

3. This segment must be applied at least one (1) time.

4. Loop (segments SPI, N1, MSG) Example:

SPI*00*G5*PA123**Brick 43~
N1*7C**93*PA123~
MSG*This stack is equipped with a prototype control device.~
< information that is non-classified, is associated with an emission release point that is identified with a state code of PA123, is described as being Brick 43, has a specific located at a point defined in the header, and is using a new control technology >

5. Segment Example:

SPI*00*G5*PA123**Brick 43~
< information that is non-classified, is associated with an emission release point that is identified with a state code of PA123 and is described as being Brick 43 >

Data Element Summary

	Ref. Des.	Data Element	Name	Attr ibutes
>>	**SPI01**	**786**	**Security Level Code** Code indicating the level of confidentiality assigned by the sender to the information following 1. This element contains the confidentiality indicator associated with the data in this loop/level. Select one from the following list:	**M ID 2/2**

		00	Company Non-Classified		
		02	Company Confidential		
		90	Government Non-Classified		
		92	Government Confidential		
SPI02	**128**	**Reference Identification Qualifier**		**X**	**ID 2/3**
		Code qualifying the Reference Identification			
		1. This element applies with POINT SOURCE reporting only. 2. This element indicates the type of physical unit identifier being reported with this iteration of the loop. Select one from the following list:			
		G5	Provider Site Number		
			A unique code identifying the provider's specific department or office location for internal routing of electronic claims		
			Indicates the state identification code/description for an emission release point		
		IX	Item Number		
			Indicates comments for a physical unit		
		PE	Plant Number		
			Indicates the Federal identification code for an emission release point		
		WF	Locally Assigned Control Number		
			Indicates the local identification code/description for an emission release point		
SPI03	**127**	**Reference Identification**		**X**	**AN 1/30**
		Reference information as defined for a particular Transaction Set or as specified by the Reference Identification Qualifier			
		1. This element applies with POINT SOURCE reporting only. 2. When SPI02 is "G5" or "WF", this element may contain either a number associated with a specific entry in SPI05, or the appropriate code value. 3. When SPI02 is "IX", this element contains a number associated with a specific entry in SPI05. 4. When SPI02 is "PE", this element contains the appropriate code value.			
SPI05	**791**	**Entity Purpose**		**O**	**AN 1/80**
		The reason for the existence of the data item specified by the electronic data item independent of its presence in an EDI transaction			
		1. This element applies with POINT SOURCE reporting only. 2. When SPI02 is "G5", "IX", or "WF", this element contains the entry associated with the identification number in SPI03.			

Segment: **MSG** **Message Text**
Position: 201
Loop: SPI Optional
Level: Detail:
Usage: Optional
Max Use: >1
Purpose: To provide a free-form format that allows the transmission of text information
Syntax Notes: **1** If MSG03 is present, then MSG02 is required.
Semantic Notes: **1** MSG03 is the number of lines to advance before printing.
Comments: **1** MSG02 is not related to the specific characteristics of a printer, but identifies top of page, advance a line, etc.
2 If MSG02 is "AA - Advance the specified number of lines before print" then MSG03 is required.
Notes: 1. This segment provides a physical-level message.

2. Segment Example:

MSG*This stack is equipped with a prototype control device.~
< message indicating that the emission point is using a new control technology >

Data Element Summary

	Ref. Des.	Data Element	Name	Attr	ibutes
>>	**MSG01**	**933**	**Free-Form Message Text** Free-form message text	**M**	**AN 1/264**
	MSG02	**934**	**Printer Carriage Control Code** A field to be used for the control of the line feed of the receiving printer	**X**	**ID 2/2**
	MSG03	**1470**	**Number** A generic number	**O**	**N0 1/9**

Segment: **N1** **Name**
Position: 204
Loop: N1 Optional
Level: Detail:
Usage: Optional
Max Use: 1
Purpose: To identify a party by type of organization, name, and code
Syntax Notes: **1** At least one of N102 or N103 is required.
2 If either N103 or N104 is present, then the other is required.
Semantic Notes:
Comments: **1** This segment, used alone, provides the most efficient method of providing organizational identification. To obtain this efficiency the "ID Code" (N104) must provide a key to the table maintained by the transaction processing party.
2 N105 and N106 further define the type of entity in N101.
Notes: 1. This segment (element N103 and N104) provides a pointer the N1 loop in the header to provide site-specific geographic information.

2. The information in N104 directly matches the information in the N104 segment contained within the header N1 loop.

3. Segment Example:

N1*7C**93*123~
<location fully detailed in the header with a pointer/identifier number of 123 which corresponds to the same number in the header N1 loop, N104 element>

Data Element Summary

	Ref. Des.	Data Element	Name	Attr	
ibutes					
>>	**N101**	**98**	**Entity Identifier Code** Code identifying an organizational entity, a physical location, property or an individual 1. This element indicates the geographic location information associated with data contained at this level of the transaction set. 7C Place of Occurrence	**M**	**ID 2/3**
	N102	**93**	**Name** Free-form name 1. This element contains the entry associated with N101.	**X**	**AN 1/60**
	N103	**66**	**Identification Code Qualifier** Code designating the system/method of code structure used for Identification Code (67) 1. This element points to the header N1 segment indicating an identification code associated with a specific location/party.	**X**	**ID 1/2**

		93	Code assigned by the organization originating the transaction set		
N104	**67**	**Identification Code**		**X**	**AN 2/80**
		Code identifying a party or other code			
		1. This element points to the header N1 segment containing an identification code associated with a specific location/party. The information in this element directly matches the information in the N104 contained within the header N1 loop.			

Segment: **PID** **Product/Item Description**
Position: 222
Loop: PID Optional
Level: Detail:
Usage: Optional
Max Use: 1
Purpose: To describe a product or process in coded or free-form format
Syntax Notes:
1 If PID04 is present, then PID03 is required.
2 At least one of PID04 or PID05 is required.
3 If PID07 is present, then PID03 is required.
4 If PID08 is present, then PID04 is required.
5 If PID09 is present, then PID05 is required.
Semantic Notes:
1 Use PID03 to indicate the organization that publishes the code list being referred to.
2 PID04 should be used for industry-specific product description codes.
3 PID08 describes the physical characteristics of the product identified in PID04. A "Y" indicates that the specified attribute applies to this item; an "N" indicates it does not apply. Any other value is indeterminate.
4 PID09 is used to identify the language being used in PID05.
Comments:
1 If PID01 equals "F", then PID05 is used. If PID01 equals "S", then PID04 is used. If PID01 equals "X", then both PID04 and PID05 are used.
2 Use PID06 when necessary to refer to the product surface or layer being described in the segment.
3 PID07 specifies the individual code list of the agency specified in PID03.

Notes:

1. This loop provides the following information:

- physical unit type
- emission unit (point source only)
- emission release point (point source only)
- control equipment physical parameter data (point, area, and nonroad source only)
- grid/county area data (area, nonroad, mobile, and biogenic source only)

2. This segment provides physical unit type.

3. Loop (segments PID, MEA) Example:

PID*X*PP*EP*01*Brick~
MEA*PD*5F*43*FT~
< structured format data about a physical unit that is a stack that is reported as being brick and having physical dimensions of 43 feet in height above the ground >

4. Segment Example:

PID*X*PP*EP*01*Brick~
< structured format data about a physical unit that is a stack (selected from a list maintained by the EPA) that is reported to be being brick >

Data Element Summary

	Ref. Des.	Data Element	Name	Attr	
ibutes					
>>	**PID01**	**349**	**Item Description Type** Code indicating the format of a description 1. This element indicates the format the identification of physical unit type is being presented in. Select one from the following list: S Structured (From Industry Code List) X Semi-structured (Code and Text)	**M**	**ID 1/1**
	PID02	**750**	**Product/Process Characteristic Code** Code identifying the general class of a product or process characteristic 1. This element indicates physical unit type information. PP Process/Production Unit	**O**	**ID 2/3**
	PID03	**559**	**Agency Qualifier Code** Code identifying the agency assigning the code values 1. This element identifies the agency maintaining the code values applied with this segment. EP United States Environmental Protection Agency (EPA)	**X**	**ID 2/2**
	PID04	**751**	**Product Description Code** A code from an industry code list which provides specific data about a product characteristic	**X**	**AN 1/12**

1. Code "15" applies with AREA, NONROAD, MOBILE, and BIOGENIC SOURCE reporting only.

2. This note pertains to AREA, NONROAD, MOBILE, and BIOGENIC SOURCE only. When using this element, only code "15" may be applied.

3. This element contains a physical unit code associated with PID02. Select one from the following list:

01	Stack
02	Control Unit
03	Emission Unit
04	Storage Tank
05	Vehicle Group
06	Process
07	Flare
08	Equipment Leak Fugitives
09	Loading
10	Cooling Towers
11	Incinerators
12	Accidental Release/Upset
13	Start Up/Shut Down
14	Wastewater
15	Area 1. This code applies with AREA, NONROAD, MOBILE, and BIOGENIC SOURCE reporting only.
16	Other

PID05 **352** **Description** **X** **AN 1/80**

A free-form description to clarify the related data elements and their content

1. This element contains a textual description associated with the code specified in PID04.

Segment: **MEA** **Measurements**
Position: 231
Loop: PID Optional
Level: Detail:
Usage: Optional
Max Use: >1
Purpose: To specify physical measurements or counts, including dimensions, tolerances, variances, and weights (See Figures Appendix for example of use of C001)

Syntax Notes:
1 At least one of MEA03 MEA05 MEA06 or MEA08 is required.
2 If MEA05 is present, then MEA04 is required.
3 If MEA06 is present, then MEA04 is required.
4 If MEA07 is present, then at least one of MEA03 MEA05 or MEA06 is required.
5 Only one of MEA08 or MEA03 may be present.

Semantic Notes:
1 MEA04 defines the unit of measure for MEA03, MEA05, and MEA06.

Comments:
1 When citing dimensional tolerances, any measurement requiring a sign (+ or -), or any measurement where a positive (+) value cannot be assumed, use MEA05 as the negative (-) value and MEA06 as the positive (+) value.

Notes:
1. This note pertains to POINT, AREA, and NONROAD SOURCE only. This segment provides emission unit, emission release point, and control equipment physical parameter/specification data associated with the entry specified in the PID segment (prior segment).

2. This note pertains to AREA, NONROAD, MOBILE, and BIOGENIC SOURCE only. This segment provides grid or county area data associated with the entry specified in the PID segment (prior segment).

3. Segment Example:

MEA*PD*5F*43*FT~
< physical dimensions indicating 43 feet in height above the ground >

Data Element Summary

Ref. Des.	Data Element	Name	Attr ibutes
MEA01	**737**	**Measurement Reference ID Code** Code identifying the broad category to which a measurement applies 1. This note pertains to AREA, NONROAD, MOBILE, and BIOGENIC SOURCE only. When applying this element, only code "PD" may be applied. 2. This element indicates the type of information being reported with this iteration of the loop. Select one from the following list:	**O ID 2/2**

			BA	Base Point		
				Indicates plume height data		
			CT	Counts		
				Indicates the number of units being reported as a single emission unit		
			PD	Physical Dimensions		
				1. When being applied with POINT, AREA, and NONROAD SOURCE reporting, this code is defined as indicating the physical dimensions of the unit. 2. When being applied with AREA, NONROAD, MOBILE, and BIOGENIC SOURCE reporting, this code is defined as indicating grid or county area data.		
			TE	Temperature		
				Indicates exit gas temperature		
	MEA02	**738**	**Measurement Qualifier**		**O**	**ID 1/3**
			Code identifying a specific product or process characteristic to which a measurement applies			
			1. This note pertains to AREA, NONROAD, MOBILE, and BIOGENIC SOURCE only. When applying this element, code "M4" may only be applied. 2. This element indicates the type of measurement being reported with this iteration of the loop. Select one from the following list:			
			5F	Height above Ground		
			FR	Flow Rate		
			ID	Inside Diameter		
			M4	Area		
			PRL	Product Level		
				Indicates maximum actual throughput		
			VOL	Volume		
				Indicates design capacity		
			ZZZ	Mutually Defined		
				Indicates exit gas velocity		
	MEA03	**739**	**Measurement Value**		**X**	**R 1/20**
			The value of the measurement			
			1. This element contains the value associated with MEA02.			
	MEA04	**C001**	**Composite Unit of Measure**		**X**	
			To identify a composite unit of measure (See Figures Appendix for examples of use)			
			1. This composite provides the unit of measure associated with MEA03.			
>>	**C00101**	**355**	**Unit or Basis for Measurement Code**		**M**	**ID 2/2**
			Code specifying the units in which a value is being expressed, or manner in which a measurement has been taken			

1. Code "EA" applies with POINT SOURCE reporting only.

2. When PID04 (prior segment) is "01", only codes representing non-metric units may be applied.

3. This element contains the unit of measure associated with MEA03. Select one from the following list:

2L	Cubic Feet Per Minute Rate of flow
4I	Meters Per Second Measure of linear speed
8U	Square Kilometer
EA	Each Units used to report number of emission units 1. This code applies with POINT SOURCE reporting only.
FA	Fahrenheit
FS	Feet Per Second Measure of linear speed
FT	Foot
HQ	Hectare
P1	Percent
SM	Square Meter

Segment: **LX** **Assigned Number**
Position: 258
Loop: LX Optional
Level: Detail:
Usage: Optional
Max Use: 1
Purpose: To reference a line number in a transaction set
Syntax Notes:
Semantic Notes:
Comments:
Notes: 1. This loop/segment applies with POINT, AREA, and NONROAD SOURCE reporting only.

2. This loop provides the following information:

- pollution-specific control unit information
- control unit characteristics
- physical unit operational status
- emission path data

3. This segment is an X12 syntactical requirement only.

4. Loop (segments LX, LIN, MEA, DTM, REF) Example:

LX*01~
LIN**CO*123456~
MEA**COT*90*P1~
DTM*196*19980601***~
REF*ACC*A~
< first iteration of a series of CAS numbers, this particular chemical has a CAS number of 123456 and is controlled with 90 percent efficiency for the time period starting June 1, 1998 by a unit that was operating during that same period >

5. Segment Example:

LX*01~
< first iteration of this LX loop within this transaction set >

Data Element Summary

	Ref. Des.	Data Element	Name	Attr	ibutes
>>	**LX01**	**554**	**Assigned Number** Number assigned for differentiation within a transaction set	**M**	**N0 1/6**

Segment: **LIN** **Item Identification**
Position: 261
Loop: LX Optional
Level: Detail:
Usage: Optional
Max Use: 1
Purpose: To specify basic item identification data
Syntax Notes:
1 If either LIN04 or LIN05 is present, then the other is required.
2 If either LIN06 or LIN07 is present, then the other is required.
3 If either LIN08 or LIN09 is present, then the other is required.
4 If either LIN10 or LIN11 is present, then the other is required.
5 If either LIN12 or LIN13 is present, then the other is required.
6 If either LIN14 or LIN15 is present, then the other is required.
7 If either LIN16 or LIN17 is present, then the other is required.
8 If either LIN18 or LIN19 is present, then the other is required.
9 If either LIN20 or LIN21 is present, then the other is required.
10 If either LIN22 or LIN23 is present, then the other is required.
11 If either LIN24 or LIN25 is present, then the other is required.
12 If either LIN26 or LIN27 is present, then the other is required.
13 If either LIN28 or LIN29 is present, then the other is required.
14 If either LIN30 or LIN31 is present, then the other is required.
Semantic Notes:
1 LIN01 is the line item identification
Comments:
1 See the Data Dictionary for a complete list of IDs.
2 LIN02 through LIN31 provide for fifteen different product/service IDs for each item. For example: Case, Color, Drawing No., U.P.C. No., ISBN No., Model No., or SKU.
Notes:
1. This segment applies with POINT, AREA, and NONROAD SOURCE reporting only.

2. This segment provides pollutant-specific information associated with a control unit specified in the PID segment (prior segment).

3. Segment Example:

LIN**CO*123456~
< CAS number is 123456 >

Data Element Summary

Ref. Des.	Data Element	Name	Attr	ibutes
LIN01	**350**	**Assigned Identification** Alphanumeric characters assigned for differentiation within a transaction set 1. This element contains a unique report number that differentiates this submission from others. This element is applied at the discretion of the trading partner.	**O**	**AN 1/20**

>>	**LIN02**	**235**	**Product/Service ID Qualifier**	**M**	**ID 2/2**

Code identifying the type/source of the descriptive number used in Product/Service ID (234)

1. This element indicates the identifier for a specific pollutant associated with a control unit.

CO	Chemical Abstract Service (CAS) Registry Number
ZZ	Mutually Defined
	Indicates Pollutant Code

>>	**LIN03**	**234**	**Product/Service ID**	**M**	**AN 1/48**

Identifying number for a product or service

1. When LIN02 is "CO", this element contains a Chemical Abstract Service (CAS) number.

2. When LIN02 is "ZZ", this element contains a pollutant code. Select one from the following list:

CO	Carbon monoxide
HC	Hydrocarbons
ISO	Isoprene
MONO	Monoterpines
NMHC	Nonmethane hydrocarbons
NMOC	Nonmethane organic compounds
NMOG	Nonmethane organic gases
NO	Nitric oxide
NOX	Nitrogen oxides
NOY	Nitrogen oxides plus secondary compounds
OVOC	Other volatile organic compounds
PB	Lead
PM	Particulate matter
PM10	Particulate matter >= 10
PM25	Particulate matter >= 2.5
ROG	Reactive organic gases
SOX	Sulfur oxides
TOG	Total organic gases
VOC	Volatile organic compounds

Segment: **MEA** **Measurements**
Position: 267
Loop: LX Optional
Level: Detail:
Usage: Mandatory
Max Use: >1
Purpose: To specify physical measurements or counts, including dimensions, tolerances, variances, and weights (See Figures Appendix for example of use of C001)
Syntax Notes:
1 At least one of MEA03 MEA05 MEA06 or MEA08 is required.
2 If MEA05 is present, then MEA04 is required.
3 If MEA06 is present, then MEA04 is required.
4 If MEA07 is present, then at least one of MEA03 MEA05 or MEA06 is required.
5 Only one of MEA08 or MEA03 may be present.
Semantic Notes:
1 MEA04 defines the unit of measure for MEA03, MEA05, and MEA06.
Comments:
1 When citing dimensional tolerances, any measurement requiring a sign (+ or -), or any measurement where a positive (+) value cannot be assumed, use MEA05 as the negative (-) value and MEA06 as the positive (+) value.
Notes:
1. This segment applies with POINT, AREA, and NONROAD SOURCE reporting only.

2. This segment provides the characteristics of a control unit specified in the PID segment (prior segment).

3. Segment Example:

MEA**COT*90*P1~
< control efficiency of 90 percent >

Data Element Summary

Ref. Des.	Data Element	Name	Attr	ibutes
MEA02	**738**	**Measurement Qualifier** Code identifying a specific product or process characteristic to which a measurement applies 1. This element indicates the control unit characteristic being reported with this iteration of the loop. Select one from the following list: COT Content The amount of specified material contained Indicates percent control efficiency data DIS Dispersion	**O**	**ID 1/3**

				The ease with which one substance mixes with another		
				Indicates path split data		
			FR	Flow Rate		
				Indicates stack velocity		
			IGR	Input Gas Rate		
				Volume of gas input during a 24-hour test period		
				Indicates percent capture efficiency data		
			VOL	Volume		
				Indicates capacity data when used to describe control unit		
	MEA03	**739**	**Measurement Value**		**X**	**R 1/20**
			The value of the measurement			
			1. This element contains the value associated with MEA02.			
	MEA04	**C001**	**Composite Unit of Measure**		**X**	
			To identify a composite unit of measure (See Figures Appendix for examples of use)			
			1. This composite provides the unit of measure associated with MEA03.			
>>	**C00101**	**355**	**Unit or Basis for Measurement Code**		**M**	**ID 2/2**
			Code specifying the units in which a value is being expressed, or manner in which a measurement has been taken			
			1. This element contains the unit of measure associated with MEA03. Select one from the following list:			
			2I	British Thermal Units (BTUs) Per Hour		
				British thermal units per hour		
			2L	Cubic Feet Per Minute		
				Rate of flow		
			4I	Meters Per Second		
				Measure of linear speed		
			4U	Pounds Per Hour		
				Rate of flow		
			4W	Ton Per Hour		
				Rate of flow		
			BR	Barrel		
			BY	British Thermal Unit (BTU)		
			CE	Centigrade, Celsius		
			CF	Cubic Feet		
			EA	Each		
			FA	Fahrenheit		
			FS	Feet Per Second		
				Measure of linear speed		
			FT	Foot		
			GA	Gallon		
			HM	Miles Per Hour		

HR	Hours
HT	Half Hour
MR	Meter
P1	Percent
SF	Square Foot
T6	Thousand Gallons

Segment: **DTM** **Date/Time Reference**
Position: 276
Loop: LX Optional
Level: Detail:
Usage: Optional
Max Use: >1
Purpose: To specify pertinent dates and times
Syntax Notes: **1** At least one of DTM02 DTM03 or DTM05 is required.
2 If DTM04 is present, then DTM03 is required.
3 If either DTM05 or DTM06 is present, then the other is required.
Semantic Notes:
Comments:
Notes: 1. This segment does not apply with BIOGENIC SOURCE reporting.

2. This segment provides the time period associated with operational status of a physical unit specified in the PID segment (prior segment).

3. Segment Example:

DTM*196*19980601~
< time period starting June 1, 1998 >

Data Element Summary

	Ref. Des.	Data Element	Name	Attr	
ibutes					
>>	**DTM01**	**374**	**Date/Time Qualifier** Code specifying type of date or time, or both date and time 1. This element indicates the date on which a specified control unit operational status initially became affective. 196 Start	**M**	**ID 3/3**
	DTM02	**373**	**Date** Date expressed as CCYYMMDD 1. This element contains the date value associated with DTM01.	**X**	**DT 8/8**

Segment: **REF** **Reference Identification**
Position: 279
Loop: LX Optional
Level: Detail:
Usage: Optional
Max Use: >1
Purpose: To specify identifying information
Syntax Notes: **1** At least one of REF02 or REF03 is required.
2 If either C04003 or C04004 is present, then the other is required.
3 If either C04005 or C04006 is present, then the other is required.
Semantic Notes: **1** REF04 contains data relating to the value cited in REF02.
Comments:
Notes: 1. This segment does not apply with BIOGENIC SOURCE reporting.

2. This segment provides the operational status of a physical unit and emission path data specified in the PID segment (prior segment).

3. Segment Example:

REF*ACC*A~
< unit is operational >

Data Element Summary

	Ref. Des.	Data Element	Name	Attr	
ibutes					
>>	**REF01**	**128**	**Reference Identification Qualifier** Code qualifying the Reference Identification 1. This element indicates the type of information being reported with this iteration of the loop. Select one from the following list: 5M Previous Sequence Indicates the HL01 identifier at which the data flow for a given emission path originates ACC Status Indicates physical unit operational status	**M**	**ID 2/3**
	REF02	**127**	**Reference Identification** Reference information as defined for a particular Transaction Set or as specified by the Reference Identification Qualifier 1. When MEA02 (prior segment) is "DIS" and REF01 is "5M", this element contains the HL01 identifier at which the data flow for a given path originates. 2. When REF01 is "ACC", this element indicates the operational status of a physical unit. Select one from the following list: A Operating B Under Construction	**X**	**AN 1/30**

		C	Under Modification		
		D	Mothballed		
			Indicates that a unit is currently permanently non-operational with the possibility of reuse		
		E	Closed - Dismantled/Removed From Site		
			Indicates that a unit dismantled and removed from the site with no possibility of reuse		
		F	Closed - Remaining On Site		
			Indicates that a unit remains on site with no possibility of reuse		
REF03	**352**	**Description**		**X**	**AN 1/80**
		A free-form description to clarify the related data elements and their content			
		1. This element contains a textual description associated with REF02.			

Segment: **HL** **Hierarchical Level**
Position: 351
Loop: HL Mandatory
Level: Detail:
Usage: Mandatory
Max Use: 1
Purpose: To identify dependencies among and the content of hierarchically related groups of data segments
Syntax Notes:
Semantic Notes:
Comments:

1 The HL segment is used to identify levels of detail information using a hierarchical structure, such as relating line-item data to shipment data, and packaging data to line-item data.
The HL segment defines a top-down/left-right ordered structure.

2 HL01 shall contain a unique alphanumeric number for each occurrence of the HL segment in the transaction set. For example, HL01 could be used to indicate the number of occurrences of the HL segment, in which case the value of HL01 would be "1" for the initial HL segment and would be incremented by one in each subsequent HL segment within the transaction.

3 HL02 identifies the hierarchical ID number of the HL segment to which the current HL segment is subordinate.

4 HL03 indicates the context of the series of segments following the current HL segment up to the next occurrence of an HL segment in the transaction. For example, HL03 is used to indicate that subsequent segments in the HL loop form a logical grouping of data referring to shipment, order, or item-level information.

5 HL04 indicates whether or not there are subordinate (or child) HL segments related to the current HL segment.

Notes:

1. This loop does not apply with BIOGENIC SOURCE reporting. For BIOGENIC SOURCE reporting, proceed to next HL loop (HLC).

2. This level/loop (HL6) provides process-level data, including:

- confidentiality indicator
- process identification information
- process-level message and/or materials and materials description (point source only)
- emission process information (SCC, AMS, and ASCT codes)
- Standard Industry Classification (SIC) codes
- process growth factor information
- process operating schedule
- seasonal operation adjustment factor information
- operating schedule line item information
- process characteristic information

3. This loop must be applied one (1) time for each emissions process.

4. Loop (segments HL, SPI, MSG, PID, REF, LX, MEA, DTM, REF, CID, STA, DTM, REF) Example:

HL*10*02*6*1~
SPI*00*2I*1234567~
PID*S*SC*EP*Z234~
REF*IJ*33~
LX*01~
MEA*AG**10*P1~
DTM*196*****CY*1997~
DTM*575*****CY*1998~
CID***EP*S~
STA*30*24*HR:::DA:-1~
DTM*196*19970501~
DTM*197*19980930~
REF*72*06~
< information that is non-classified, associated with a process that is identified with a Federal segment code of 1234567, is being reported in a structured format indicating an SCC of Z234 and an SIC code of 33; has a process growth factor of 10 percent for the period starting in 1997 and ending in 1998; has an operating schedule that averages 24 hours per day for the period beginning May 1, 1998 and ending September 30, 1998 and associated with a modeling episode >

5. Segment Example:

HL*10*02*6*1~
< tenth HL loop iteration that is subordinate to the second HL loop of this transaction set that contains physical-level information and has subordinate loops >

Data Element Summary

	Ref. Des.	Data Element	Name	Attr	
ibutes					
>>	**HL01**	**628**	**Hierarchical ID Number** A unique number assigned by the sender to identify a particular data segment in a hierarchical structure 1. This element contains a unique number used to identify the iteration of an HL loop.	**M**	**AN 1/12**
	HL02	**734**	**Hierarchical Parent ID Number** Identification number of the next higher hierarchical data segment that the data segment being described is subordinate to 1. This note pertains to POINT, AREA, and NONROAD SOURCE only. This element indicates that this level of the transaction set points to the HL loop parent containing the HL03 code "5" for physical-level data. 2. This note pertains to MOBILE SOURCE only. This element indicates that this level of the transaction set points to the HL loop parent containing the HL03 Code "C" for schedule (activity)-level data.	**O**	**AN 1/12**
>>	**HL03**	**735**	**Hierarchical Level Code** Code defining the characteristic of a level in a hierarchical structure 1. This element indicates that this level of the transaction set contains process-level data. 6 Sub-Category Code identifying a further breakdown of the category Indicates process-level data	**M**	**ID 1/2**
	HL04	**736**	**Hierarchical Child Code** Code indicating if there are hierarchical child data segments subordinate to the level being described 1 Additional Subordinate HL Data Segment in This Hierarchical Structure.	**O**	**ID 1/1**

Segment: **SPI** **Specification Identifier**
Position: 354
Loop: SPI Optional
Level: Detail:
Usage: Optional
Max Use: 1
Purpose: To provide a description of the included specification or technical data items
Syntax Notes: **1** If either SPI02 or SPI03 is present, then the other is required.
Semantic Notes:
Comments:
Notes:

1. This loop/segment does not apply with BIOGENIC SOURCE reporting.

2. This loop provides the following information:

- confidentiality indicator
- process identification information
- process-level message
- materials and materials description (point source only)

3. This segment provides the confidentiality indicator for process-level data and process identification information.

4. This note pertains to POINT SOURCE only. This segment must be applied at least one (1) time to provide the Federal identification code for segment number (SPI02 code is "2I").

5. Loop (segments SPI, MSG) Example

SPI*00*2I*1234567~
MSG*This is a controlled process.~
< information that is non-classified, associated with a process that is identified with a Federal segment code of 1234567 and a message indicating that the process is controlled >

6. Segment Example:

SPI*00*2I*1234567~
< information that is non-classified, associated with a process that is identified with a Federal segment code of 1234567 >

Data Element Summary

	Ref. Des.	Data Element	Name	Attr	ibutes
>>	**SPI01**	**786**	**Security Level Code**	**M**	**ID 2/2**

Code indicating the level of confidentiality assigned by the sender to the information following

1. This element contains the confidentiality indicator associated with the data in this loop/level. Select one from the following list:

00	Company Non-Classified
02	Company Confidential
90	Government Non-Classified
92	Government Confidential

SPI02 128 Reference Identification Qualifier X ID 2/3

Code qualifying the Reference Identification

1. This element applies with POINT SOURCE reporting only.

2. This element must be applied at least one (1) time to provide code "2I".

3. This element indicates the type of process identifier being reported with this iteration of the loop. Select one from the following list:

2I	Tracking Number
	Indicates the Federal identification code for a segment number
IX	Item Number
	Indicates comments for a process
PE	Plant Number
	Indicates the Federal identification code for a process
WF	Locally Assigned Control Number
	Indicates the local identification code/description for a process

SPI03 127 Reference Identification X AN 1/30

Reference information as defined for a particular Transaction Set or as specified by the Reference Identification Qualifier

1. This element applies with POINT SOURCE reporting only.

2. When SPI02 is "2I" or "PE", this element contains the appropriate code value.

3. When SPI02 is "IX", this element contains a number associated with a specific entry in SPI05.

4. When SPI02 is "WF", this element may contain either a number associated with a specific entry in SPI05, or the appropriate code value.

SPI05 791 Entity Purpose O AN 1/80

The reason for the existence of the data item specified by the electronic data item independent of its presence in an EDI transaction

1. This element applies with POINT SOURCE reporting only.

2. When SPI02 is "IX" or "WF", this element contains the entry associated with the identification number in SPI03.

Segment: **MSG** **Message Text**
Position: 375
Loop: SPI Optional
Level: Detail:
Usage: Optional
Max Use: >1
Purpose: To provide a free-form format that allows the transmission of text information
Syntax Notes: **1** If MSG03 is present, then MSG02 is required.
Semantic Notes: **1** MSG03 is the number of lines to advance before printing.
Comments: **1** MSG02 is not related to the specific characteristics of a printer, but identifies top of page, advance a line, etc.
2 If MSG02 is "AA - Advance the specified number of lines before print" then MSG03 is required.
Notes: 1. This segment does not apply with BIOGENIC SOURCE reporting.

2. This segment provides a process-level message.

3. This note pertains to POINT SOURCE only. This segment provides material and material descriptions.

4. Segment Example:

MSG*This is a controlled process.~
< message indicating that the process is controlled >

Data Element Summary

	Ref. Des.	Data Element	Name	Attr ibutes	
>>	**MSG01**	**933**	**Free-Form Message Text** Free-form message text	**M**	**AN 1/264**

Segment: **N1** **Name**
Position: 378
Loop: N1 Optional
Level: Detail:
Usage: Optional
Max Use: 1
Purpose: To identify a party by type of organization, name, and code
Syntax Notes: **1** At least one of N102 or N103 is required.
2 If either N103 or N104 is present, then the other is required.
Semantic Notes:
Comments: **1** This segment, used alone, provides the most efficient method of providing organizational identification. To obtain this efficiency the "ID Code" (N104) must provide a key to the table maintained by the transaction processing party.
2 N105 and N106 further define the type of entity in N101.
Notes: 1. This segment (element N103 and N104) provides a pointer to the N1 loop in the header to provide physical-level geographic information.

2. The information in N104 directly matches the information in the N104 segment contained within the header N1 loop.

3. Segment Example:

N1*7C**93*PA123~
<location fully detailed in the header with a pointer/identifier number of PA123 which corresponds to the same number in the header N1 loop, N104 element>

Data Element Summary

	Ref. Des.	Data Element	Name	Attr	
ibutes					
>>	**N101**	**98**	**Entity Identifier Code** Code identifying an organizational entity, a physical location, property or an individual 1. This element indicates the geographic location information associated with data contained at this level of the transaction set. 7C Place of Occurrence	**M**	**ID 2/3**
	N102	**93**	**Name** Free-form name 1. This element contains the entry associated with N101.	**X**	**AN 1/60**
	N103	**66**	**Identification Code Qualifier** Code designating the system/method of code structure used for Identification Code (67) 1. This element points to the header N1 segment indicating an identification code associated with a specific location/party.	**X**	**ID 1/2**

		93	Code assigned by the organization originating the transaction set		
N104	**67**	**Identification Code**		**X**	**AN 2/80**
		Code identifying a party or other code			
		1. This element points to the header N1 segment containing an identification code associated with a specific location/party. The information in the N104 contained within the header N1 loop.			

Segment: **PID** **Product/Item Description**
Position: 396
Loop: PID Optional
Level: Detail:
Usage: Optional
Max Use: 1
Purpose: To describe a product or process in coded or free-form format
Syntax Notes:
1 If PID04 is present, then PID03 is required.
2 At least one of PID04 or PID05 is required.
3 If PID07 is present, then PID03 is required.
4 If PID08 is present, then PID04 is required.
5 If PID09 is present, then PID05 is required.

Semantic Notes:
1 Use PID03 to indicate the organization that publishes the code list being referred to.
2 PID04 should be used for industry-specific product description codes.
3 PID08 describes the physical characteristics of the product identified in PID04. A "Y" indicates that the specified attribute applies to this item; an "N" indicates it does not apply. Any other value is indeterminate.
4 PID09 is used to identify the language being used in PID05.

Comments:
1 If PID01 equals "F", then PID05 is used. If PID01 equals "S", then PID04 is used. If PID01 equals "X", then both PID04 and PID05 are used.
2 Use PID06 when necessary to refer to the product surface or layer being described in the segment.
3 PID07 specifies the individual code list of the agency specified in PID03.

Notes:
1. This loop/segment does not apply with BIOGENIC SOURCE reporting.

2. This loop/segment provides emission process codes.

3. This segment must be applied at least one (1) time to provide the emission process code (PID04).

4. Loop/Segment Example:

PID*S*SC*EP*Z234**R2~
< process data being reported in a structured format indicating a secondary emission process code that is an SCC of Z234 >

Data Element Summary

	Ref. Des.	Data Element	Name	Attr ibutes	
>>	**PID01**	**349**	**Item Description Type**	**M**	**ID 1/1**

Code indicating the format of a description

1. This element indicates the format the identification of emission process code is being presented in.

S Structured (From Industry Code List)

PID02 750 Product/Process Characteristic Code O ID 2/3

Code identifying the general class of a product or process characteristic

1. Code "12" applies with AREA, MOBILE, and NONROAD ENGINE SOURCE reporting only.

2. This element indicates the type of emission process code information being reported with this iteration of the loop. Select one from the following list:

12 Type and/or Process

Indicates the AIRS Area and Mobile Sources (AMS) or Area Source Category (ASCT) code

1. This code applies with AREA, MOBILE, and NONROAD ENGINE SOURCE reporting only.

SC Source

Indicates the Source Classification Code (SCC)

PID03 559 Agency Qualifier Code X ID 2/2

Code identifying the agency assigning the code values

1. Code "AG" applies with AREA, MOBILE, and NONROAD ENGINE SOURCE reporting only.

2. This element identifies the agency maintaining the code values applied with this segment. Select one from the following list:

AG State Agency Assigned

1. This code applies with AREA, MOBILE, and NONROAD ENGINE SOURCE reporting only.

EP United States Environmental Protection Agency (EPA)

PID04 751 Product Description Code X AN 1/12

A code from an industry code list which provides specific data about a product characteristic

1. This element contains the value associated with the code specified in PID02.

PID06 752 Surface/Layer/Position Code O ID 2/2

Code indicating the product surface, layer or position that is being described

1. This element applies with POINT SOURCE reporting only.

2. This element indicates that the code provided in PID04 is a secondary emission process code.

R2 Relative Position 2

Indicates a secondary emission process code

Segment: **REF** **Reference Identification**
Position: 423
Loop: REF Optional
Level: Detail:
Usage: Optional
Max Use: 1
Purpose: To specify identifying information
Syntax Notes: **1** At least one of REF02 or REF03 is required.
2 If either C04003 or C04004 is present, then the other is required.
3 If either C04005 or C04006 is present, then the other is required.
Semantic Notes: **1** REF04 contains data relating to the value cited in REF02.
Comments:
Notes: 1. This loop/segment does not apply with BIOGENIC SOURCE reporting.

2. This loop/segment provides Standard Industry Classification (SIC) code associated with the process specified in the PID segment (prior segment).

3. Loop/Segment Example:

REF*IJ*33~
< an SIC code of 33 >

Data Element Summary

	Ref. Des.	Data Element	Name	Attr	
ibutes					
>>	**REF01**	**128**	**Reference Identification Qualifier** Code qualifying the Reference Identification 1. This element indicates a Standard Industry Classification (SIC) code. IJ Standard Industry Classification (SIC) Code	**M**	**ID 2/3**
	REF02	**127**	**Reference Identification** Reference information as defined for a particular Transaction Set or as specified by the Reference Identification Qualifier 1. This element contains the value associated with REF01.	**X**	**AN 1/30**

Segment: **LX** **Assigned Number**
Position: 432
Loop: LX Optional
Level: Detail:
Usage: Optional
Max Use: 1
Purpose: To reference a line number in a transaction set
Syntax Notes:
Semantic Notes:
Comments:
Notes:

1. This loop/segment does not apply with BIOGENIC SOURCE reporting.

2. This loop provides process growth factor information.

3. This segment is an X12 syntactical requirement only.

4. Loop (segments LX, MEA, DTM, REF) Example:

LX*01~
MEA*AG**10*P1~
DTM*196*****CY*1997~
DTM*575*****CY*1998~
REF*ACA**This process was dynamic.~
< a process growth factor of 10 percent for the period starting in 1997 and ending in 1998 and a description indicating that the process was dynamic >

5. Segment Example:

LX*01~
< first iteration of this LX loop within this transaction set >

Data Element Summary

	Ref. Des.	Data Element	Name	Attr ibutes	
>>	**LX01**	**554**	**Assigned Number** Number assigned for differentiation within a transaction set	**M**	**N0 1/6**

Segment: **MEA** **Measurements**
Position: 441
Loop: LX Optional
Level: Detail:
Usage: Mandatory
Max Use: >1
Purpose: To specify physical measurements or counts, including dimensions, tolerances, variances, and weights (See Figures Appendix for example of use of C001)
Syntax Notes:
1 At least one of MEA03 MEA05 MEA06 or MEA08 is required.
2 If MEA05 is present, then MEA04 is required.
3 If MEA06 is present, then MEA04 is required.
4 If MEA07 is present, then at least one of MEA03 MEA05 or MEA06 is required.
5 Only one of MEA08 or MEA03 may be present.
Semantic Notes:
1 MEA04 defines the unit of measure for MEA03, MEA05, and MEA06.
Comments:
1 When citing dimensional tolerances, any measurement requiring a sign (+ or -), or any measurement where a positive (+) value cannot be assumed, use MEA05 as the negative (-) value and MEA06 as the positive (+) value.
Notes:
1. This segment does not apply with BIOGENIC SOURCE reporting.

2. This segment provides process growth factor data associated with the process specified in the PID segment (prior segment).

3. Segment Example:

MEA*AG**10*P1~
< a process growth factor of 10 percent >

Data Element Summary

Ref. Des.	Data Element	Name	Attr	ibutes
MEA01	**737**	**Measurement Reference ID Code** Code identifying the broad category to which a measurement applies 1. This element indicates process growth factor data. AG Compliance Total Indicates process growth factor data	**O ID 2/2**	
MEA03	**739**	**Measurement Value** The value of the measurement 1. This element contains the value associated with MEA01.	**X R 1/20**	
MEA04	**C001**	**Composite Unit of Measure**	**X**	

To identify a composite unit of measure (See Figures Appendix for examples of use)

1. This composite provides the unit of measure associated with MEA03.

>> **C00101** **355** **Unit or Basis for Measurement Code** **M** **ID 2/2**

Code specifying the units in which a value is being expressed, or manner in which a measurement has been taken

1. This element contains the unit of measure associated with MEA03.

P1 Percent

Segment: **DTM** **Date/Time Reference**
Position: 450
Loop: LX Optional
Level: Detail:
Usage: Optional
Max Use: >1
Purpose: To specify pertinent dates and times
Syntax Notes: **1** At least one of DTM02 DTM03 or DTM05 is required.
2 If DTM04 is present, then DTM03 is required.
3 If either DTM05 or DTM06 is present, then the other is required.
Semantic Notes:
Comments:
Notes: 1. This segment does not apply with BIOGENIC SOURCE reporting.

2. This segment provides the time period associated with the process growth factor data in the MEA segment (prior segment).

3. Segment Example:

DTM*196*****CY*1997~
DTM*575*****CY*1998~
< a process growth factor time period starting in 1997 and ending in 1998 >

Data Element Summary

	Ref. Des.	Data Element	Name	Attr	
ibutes					
>>	**DTM01**	**374**	**Date/Time Qualifier**	**M**	**ID 3/3**
			Code specifying type of date or time, or both date and time		
			1. This element indicates the start and end dates associated with a process growth factor. Select one from the following list:		
			196 Start		
			575 Projected Action End Date		
	DTM05	**1250**	**Date Time Period Format Qualifier**	**X**	**ID 2/3**
			Code indicating the date format, time format, or date and time format		
			1. This element specifies the format in which the value associated with DTM01 must be presented.		
			CY Year Expressed in Format CCYY		
	DTM06	**1251**	**Date Time Period**	**X**	**AN 1/35**
			Expression of a date, a time, or range of dates, times or dates and times		
			1. This element contains the value associated with the code specified in DTM01.		

Segment: **REF** **Reference Identification**
Position: 453
Loop: LX Optional
Level: Detail:
Usage: Optional
Max Use: >1
Purpose: To specify identifying information
Syntax Notes: **1** At least one of REF02 or REF03 is required.
2 If either C04003 or C04004 is present, then the other is required.
3 If either C04005 or C04006 is present, then the other is required.
Semantic Notes: **1** REF04 contains data relating to the value cited in REF02.
Comments:
Notes: 1. This segment does not apply with BIOGENIC SOURCE reporting.

2. This segment provides growth factor reference text associated with the process specified in the MEA segment (prior segment).

3. Segment Example:

REF*ACA**This process was dynamic.~
< a process growth factor description indicating that the process was dynamic >

Data Element Summary

	Ref. Des.	Data Element	Name	Attr	
ibutes					
>>	**REF01**	**128**	**Reference Identification Qualifier** Code qualifying the Reference Identification 1. This element indicates process growth factor reference text. ACA Growth Factor Reference Indicates process growth factor reference text	**M**	**ID 2/3**
	REF03	**352**	**Description** A free-form description to clarify the related data elements and their content 1. This element contains the entry associated with REF01.	**X**	**AN 1/80**

Segment: **CID** **Characteristic/Class ID**
Position: 462
Loop: CID Optional
Level: Detail:
Usage: Optional
Max Use: 1
Purpose: To specify the general class or specific characteristic upon which test results are being reported or are to be taken
Syntax Notes:
1 At least one of CID01 CID02 CID04 or CID05 is required.
2 If either CID03 or CID04 is present, then the other is required.
3 If CID06 is present, then both CID03 and CID04 are required.
4 If CID07 is present, then at least one of CID04 or CID05 is required.
Semantic Notes:
Comments:
1 CID06 specifies the individual code list of the agency specified in CID03.
2 CID07 refers to whether or not the characteristic identified in CID04 or CID05 or both is affected by the product change. If it is affected, the value is "Y". A value of "N" is used when it is known that it will not be affected. Any other value indicates it is indeterminate.

Notes:

1. This loop/segment does not apply with BIOGENIC SOURCE reporting.

2. This loop provides the following information:

- process operating schedule
- seasonal operation adjustment factor information
- operating schedule line item information
- process characteristic information

3. This segment provides operation schedule, seasonal operation adjustment factor, and process characteristic information associated with the process specified in the PID segment (prior segment).

4. Loop (segments CID, STA, DTM, REF) Example:

CID***EP*S~
STA*30*24*HR:::DA:-1~
DTM*196*19970501~
DTM*197*19980930~
REF*72*06~
< an operating schedule that averages 24 hours per day for the period beginning May 1, 97 and ending September 30, 1998 and associated with a modeling episode >

5. Segment Example:

CID***EP*S~
< an operating schedule >

6. Annual Average Hours per Year, when STA03(C0101) = 'HR' and STA03(C0104) = 'YR' and STA03(C105) = '-1', If HL03 = '6' and CID04 = 'S' and STA01 = '30'.

Data Element Summary

Ref. Des.	Data Element	Name	Attr	
ibutes				
CID03	**559**	**Agency Qualifier Code** Code identifying the agency assigning the code values 1. This element identifies the agency maintaining the code values applied with this segment. EP United States Environmental Protection Agency (EPA)	**X**	**ID 2/2**
CID04	**751**	**Product Description Code** A code from an industry code list which provides specific data about a product characteristic 1. This element indicates the type of information being reported with this iteration of the loop. Select one from the following list: A Seasonal Operating Adjustment Factor AC Ash Content	**X**	**AN 1/12**

HC	Heat Content
S	Operating Schedule
SC	Sulfur Content
T	Maximum Actual Throughput

Segment: **STA** **Statistics**
Position: 492
Loop: STA Optional
Level: Detail:
Usage: Optional
Max Use: 1
Purpose: To provide summary statistics related to a specific collection of test result values
Syntax Notes:
Semantic Notes:
Comments:
Notes:

1. This loop/segment does not apply with BIOGENIC SOURCE reporting.

2. When STA03(C0101) = 'HR' and STA03(C0104) = 'YR' and STA03(C0105) = '-1', IF HL03 = '6' and CID04 = 'S' and STA01 = '30' then Annual average hours per year is reported (note added may not be in right position)

3. This loop provides the following information:

- process operating schedule
- seasonal operation adjustment factor information
- operating schedule line item information
- process characteristic information

4. This segment provides operating schedule, seasonal operational adjustment factor, and process characteristic information as specified in the CID segment (prior segment).

5. Loop (segments STA, DTM, REF) Example:

STA*30*24*HR:::DA:-1~
DTM*196*19980501~
DTM*197*19980930~
REF*72*06~
< schedule that averages 24 hours per day for the period beginning May 1, 1998 and ending September 30, 1998 and associated with a modeling episode >

6. Segment Example:

STA*30*24*HR:::DA:-1~
< schedule that averages 24 hours per day >

Data Element Summary

	Ref. Des.	Data Element	Name	Attr	ibutes
>>	**STA01**	**950**	**Statistic Code**	**M**	**ID 2/2**

A code specifying the specific statistic being reported

1. When CID04 (prior segment) is "T", " HC", "SC", or "AC", code "34" must be applied.

2. This element indicates the type of measurement being reported with this iteration of the loop. Select one from the following list:

30	Average
34	Calculated
	Indicates process specifications
ZZ	Mutually Defined
	Indicates percent

1. When applying this code, C00101 must be "P1".

>> **STA02** **739** **Measurement Value** **M** **R** **1/20**

The value of the measurement

1. This element contains the value associated with the code specified in the CID segment (prior segment).

2. When STA03(C0101) = 'HR' and STA03(C0104) = 'YR' and STA03(C0105) = '-1', IF HL03 = '6' and CID04 = 'S' and STA01 = '30', denotes the annual average hours per year for operating schedule associated with process.

STA03 **C001** **Composite Unit of Measure** **O**

To identify a composite unit of measure (See Figures Appendix for examples of use)

1. This composite provides the units of measure associated with STA02.

2. The unit of measure associated with the value in STA02 when STA01 is "34" and CID04 (prior segment) is "HC" must be reported in the REF segment (following segment).

3. Units of measure that are complex expressions must be expressed in a manner similar to the following example: million btu per gallon = *BY::10:GA:-1*

>> **C00101** **355** **Unit or Basis for Measurement Code** **M** **ID 2/2**

Code specifying the units in which a value is being expressed, or manner in which a measurement has been taken

1. When STA01 is "ZZ", or STA01 is "34" and CID04 (prior segment) is "SC" or "AC", "P1" must be applied.

2. This element contains the first unit in the complex unit of measure expression associated with STA02. Select one from the following list:

BY	British Thermal Unit (BTU)
DA	Days
HR	Hours
P1	Percent

		WK Week		
C00104	**355**	**Unit or Basis for Measurement Code**	**O**	**ID 2/2**

Code specifying the units in which a value is being expressed, or manner in which a measurement has been taken

1. This element provides the second unit in the complex unit of measure expression associated with STA02. Select one from the following list:

5I	Standard Cubic Foot One cubic foot of gas measured at a fixed temperature and pressure; the value used for the temperature and pressure varies depending on the type of gas being measured
BR	Barrel
DA	Days
GA	Gallon
T6	Thousand Gallons
TN	Net Ton (2,000 LB).
WK	Week
YR	Years

C00105	**1018**	**Exponent**	**O**	**R 1/15**

Power to which a unit is raised

1. This element contains the exponent allowing the formulation of the complex expression that may be required as the unit of measure associated with STA02.

2. When applying a complex expression (e.g., million btu per gallon), apply the exponent of "-1" as per the example noted in STA03.

Segment: **DTM** **Date/Time Reference**
Position: 495
Loop: STA Optional
Level: Detail:
Usage: Optional
Max Use: >1
Purpose: To specify pertinent dates and times
Syntax Notes: **1** At least one of DTM02 DTM03 or DTM05 is required.
2 If DTM04 is present, then DTM03 is required.
3 If either DTM05 or DTM06 is present, then the other is required.
Semantic Notes:
Comments:
Notes: 1. This segment does not apply with BIOGENIC SOURCE reporting.

2. This segment provides the beginning and end dates for each applicable season/episode associated with the schedule or adjustment factor specified in the CID segment (prior segment).

3. Segment Example:

DTM*196*19970501~
DTM*197*19980930~
< a schedule time period beginning May 1, 97 and ending September 30, 1998 >

Data Element Summary

	Ref. Des.	Data Element	Name	Attr	
ibutes					
>>	**DTM01**	**374**	**Date/Time Qualifier** Code specifying type of date or time, or both date and time 1. This element indicates the beginning and end dates for the applicable season/episode associated with the schedule or adjustment factor specified in the CID segment (prior segment). Select one from the following list: 196 Start 197 End	**M**	**ID 3/3**
	DTM02	**373**	**Date** Date expressed as CCYYMMDD	**X**	**DT 8/8**

1. This element contains the values associated with the code specified in DTM01.

2. The format for reporting the applicable information is as follows (CC represents the century and YY represents the year in which the month falls):

December------- CC YY1201
March ----------- CCYY0301
June ------------ CCYY0601
September ----- CCYY0901

Segment: **REF** **Reference Identification**
Position: 498
Loop: STA Optional
Level: Detail:
Usage: Optional
Max Use: >1
Purpose: To specify identifying information
Syntax Notes: **1** At least one of REF02 or REF03 is required.
2 If either C04003 or C04004 is present, then the other is required.
3 If either C04005 or C04006 is present, then the other is required.
Semantic Notes: **1** REF04 contains data relating to the value cited in REF02.
Comments:
Notes: 1. This segment does not apply with BIOGENIC SOURCE reporting.

2. This segment provides an operating schedule line item associated with the schedule and the process characteristic information specified in the CID segment (prior segment).

3. REF01 code "PG" (i.e., product) and REF04 (i.e., process) must be applied in conjunction in order to identify an activity (throughput).

4. To report an activity (throughput), create the appropriate product/process terminology by selecting REF01 code "PG" and then selecting the appropriate product term from the REF02 code list. Then select REF04 C04001 code "SU" and select the appropriate process term from the REF04 C04002 code list. An example of an activity (throughput) that can be identified is coal burned, where coal is the product (REF02 code "COAL") and burned is the process (REF04 C04002 code "BURN"). If an appropriate product/process combination can not be created, enter the activity (throughput) in REF03 in the form of a text comment.

5. Segment Example:

REF*72*06~
< a schedule associated with a modeling episode >

REF*PG*COAL**SU:BURN~
< an process characteristic of coal burned >

Data Element Summary

	Ref. Des.	Data Element	Name	Attributes	
>>	**REF01**	**128**	**Reference Identification Qualifier** Code qualifying the Reference Identification	**M**	**ID 2/3**

1. When code "PG" is applied, REF04 must also be applied to identify a process.

2. This element indicates the type of information being reported with this iteration of the loop. Select one from the following list:

72	Schedule Reference Number
	Identifies a number for a program schedule (for example, a logic type of network) or working schedule to complete a specific task or set of tasks
	Indicates the operating schedule line item
PG	Product Group
	Indicates a process product 1. When this code is applied, REF04 must also be applied.

REF02 127 Reference Identification X AN 1/30

Reference information as defined for a particular Transaction Set or as specified by the Reference Identification Qualifier

1. When REF01 is "72", this element contains the operating schedule line item being reported with this iteration of the loop. Select one from the following numeric (01 - 06) list:

2. When REF01 is "PG", REF04 must be used in conjunction in order to identify a throughput.

3. When REF01 is "PG", this element contains the appropriate product code value. Select one from the following alpha-numeric list:

01	Ozone Season
02	Peak Ozone Season
03	CO Season
04	Peak CO Season
05	Particulate Matter Season
06	Modeling Episode
ABR	Abrasive
ABSP	ABS Polymer
ACEAL	Acetaldehyde
ACID	Acid
ACIDFN	Acid Final
ACIDPR	Acid Pure
ACRNL	Acrylonitrile
ACROL	Acrolein
ADH	Adhesive
ADN	ADN
ADPN	Adipronitrile

AGNT	Agent
ALLY	Alloy
ALMA	Alumina
ALMO	Aluminum Molten
AMM	Ammonia
ANILN	Aniline
ASB	Asbestos
ASP	Asphalt
ASPSL	Asphalt Shingle
BATT	Batteries
BAUX	Bauxite
BEAN	Beans
BEANGR	Beans Green
BEETRW	Beets Raw
BNZN	Benzene
BOD	Bodies
BORD	Board
BRED	Bread
BRIK	Brick
BUTDN	Butadiene
BUTDN13	1,3-Butadiene
CAD	Cadmium
CAN	Cans
CAPLM	Caprolactam
CAR	Car(s)
CARTOT	Cargo Total
CAST	Castings
CATL	Catalyst
CBLK	Carbon Black
CC14	CC14
CEM	Cement
CFC133	CFC-133
CHAR	Charcoal
CHRMORE	Chromite Ore
CHXN	Cyclohexene
CIG	Cigarettes
CL	Chlorine
CLAY	Clay
CLBNZ	Chlorobenzene(s)
CLFRM	Chloroform
CLMET	Chloromethane(s)

CLNK	Clinker
CLOT	Clothes
COAL	Coal
COALSTG	Coal Storage
COAT	Coating
COKE	Coke
COKEFR	Coke Free
COKERW	Coke Raw
CON	Concrete
COPLY	Copolymer
CORE	Cores
COREOL	Core Oil
COTT	Cotton
COW	Cattle
CTET	Carbon Tetrachloride
CU	Copper
CULL	Cullet
CUM	Cumene
CURR	Current
CUSC	Copper Scrap
DBZF	Dibenzofuran
DCB	1,4-Dichlorobenzene
DCE	1,2-Dichloroethane
DIST	Distance
DMF	DMF
DMTP	Dimethyl Terephthalate
DRAN	Drains
DRUM	Drums
EAFDT	EAF Dust
EDC	EDC
EDCVC	EDC-VC
ELEC	Electricity
ELECRD	Electrode
ENER	Energy
EPCH	Epichlorohydrin
ETCSOL	Etching Solution
ETH	Ethylene
ETHBNZ	Ethylbenzene
ETHBST	Ethylbenzene/Styrene
ETHCL	Ethyl Chloride
ETHDB	Ethylene Dibromide

ETHDC	Ethylene Dichloride
ETHOX	Ethylene Oxide
EXP	Exposed
EXTFC	Extractor Feed Cake
FABR	Fabric
FDNHCO	Feed NaHCO3 Dry
FEED	Feed
FEEDDR	Feed Dry
FEEDFR	Feed Fresh
FEEDMT	Feed Material
FELTST	Felt Saturated
FERT	Fertilizer
FIBR	Fiber
FISH	Fish
FISHML	Fish Meal
FISHRW	Fish Raw
FISHSC	Fish Scrap
FLC1112	Fluorocarbon 11/12
FLC22	Fluorocarbon 22
FLSP	Fluorspar
FORM	Formaldehyde
FORM37	37% Formaldehyde
FRMGS	Ferromanganese
FRSH	Fresh
FUEL	Fuel
GAS	Gas
GLSS	Glass
GLSSBD	Glass Beaded
GLYET	Glycol Ethers
GRAD	Graders
GRIT	Grit
GRN	Grain
GYPCR	Gypsum Crude
HAMB	Hamburger
HCL	Hydrochloric Acid
HEATIN	Heat Input
HXCBNZ	Hexachlorobenzene
HYC	Hydrocarbons Total
INK	Ink
IRON	Iron
LAB	LAB

LEAD	Lead
LEADOX	Lead Oxide
LIME	Lime
LIMHYD	Lime Hydrated
LIMSTN	Limestone
LOG	Logs
MATL	Material
MATLRW	Material Raw
MCBNZ	Monochlorobenzene
MEAL	Meal
MEAT	Meat
MERC	Mercury
METL	Metal
METLHT	Metal Hot
METLSPR	Metal Sprayed
MLCAHD	Meleic Anhydride
MTHCFRM	Methyl Chloroform
MTHCHL	Methylene Chloride
MTHCLFR	Methylene Chloride Fresh
NAPT	Naphthalene
NEOP	Neoprene
NICK	Nickel
NITELST	Nitrile Elastomer
NTRBZN	Nitrobenzene
OCRSL	0-Cresol
OIL	Oil
ORE	Ore
ORECON	Ore Concentrated
OVRBUR	Overburden
P205	P205
PAINT	Paint
PAPR	Paper
PCB	PCB
PCE	PCE
PCECC	PCE & CC14
PCETCE	PCE & TCE
PCETH	Perchloroethlyene
PCETHFR	Perchloroethylene Fresh
PCPHNL	Pentachlorophenol
PELLT	Pellets
PEST	Pesticide

PHNL	Phenol
PHSGN	Phosgene
PHSPH	Phosphate
PHSPHRK	Phosphate Rock
PHSPRS	Phosphorous
PIGIRN	Pig Iron
PIGMNT	Pigment
PILE	Pile
PIPE	Pipe
PIPECST	Pipe Cast
PLCANHD	Phthalic Anhydride
PLSTC	Plastic
PLYWD38	Plywood 3/8 inch
PM	PM
POLVNL	Polyvinyl
POLY	Polymer
POM	POM
PROD	Product
PRODDR	Product Dry
PRODFN	Product Finished
PRODSA	Product Surface Area
PRPLYN	Propylene
PULP	Pulp
PULPADB	Pulp Air-Dried Bleached
PULPADU	Pulp Air-Dried Unbleached
RAYN	Rayon
REF	Refinery
RESD	Residues/Skimmings
RESN	Resin
RESNPA	Resin Polyester/Alkyd
RESNTN	Resin Thinned
ROCK	Rock
SALT	Salt
SAND	Sand
SAWDST	Sawdust
SBR	SBR
SCMNGS	Silicomanganese
SCRP	Scrap
SCRPRS	Scrapers
SEAL	Seals
SHOT	Shot

SINT	Sinter
SLAG	Slag
SLBLKL	Solids Black Liquor
SLDG	Sludge
SLDGDR	Sludge Dried
SOLNCT	Solution Coating
SOLNFRM	Solution 37% Formaldehyde
SOLV	Solvent
SOLVCT	Solvent Coating
SOLVFR	Solvent Fresh
SOLVIN	Solvent in Ink
SOLVMU	Solvent Make-Up
SOLVRC	Solvent Reclaimed
SOLVTN	Solvent Thinned
SOUR	Sour Gas
STEL	Steel
STELSP	Steel Specialty
STM	Steam
STON	Stone
STOR	Storage
STRCH	Starch
STYR	Styrene
SULF	Sulfer 100%
SULFAC	Sulfuric Acid
SUMP	Sump
SURF	Surface
TCBZN	1,2,4-Trichlorobenzene
TCELN	Trichloroethylene
TCELNFR	Trichloroethylene Fresh
TCEN	1,1,1-Trichlorothane
TDI	TDI
TETHLD	Tetraethyl Lead
TIRE	Tires
TNT	TNT
TOLN	Toluene
TONE	Toner
TOPSL	Topsoil
TPLCAC	Terephthalic Acid Crude
TRCKHL	Trucks Haul
UREA	Urea
VAC	Vacuum

			VEHCL	Vehicles Light/Medium		
			VNLC	Vinyl Chloride		
			VNLCM	Vinyl Chloride Monomer		
			VNLDC	Vinyldiene Chloride		
			WATCO	Water Cooling		
			WAX	Wax		
			WFR	Wafers/Chips		
			WFRBRD	Waferboard		
			WOOD	Wood		
			WOODDF	Wood Dry Flakes		
			WOODDR	Wood Dried		
			WSTE	Waste		
			WSTWTR	Wastewater		
			XLN	Xylene(s)		
			XLNM	m-Xylene		
			XLNO	o-Xylene		
			XLNT	Xylene(s) Total		
			ZINC	Zinc		
			ZINCOX	Zinc Oxide		
	REF03	**352**	**Description**		**X**	**AN 1/80**
			A free-form description to clarify the related data elements and their content 1. When REF01 is "72", this element contains a description associated with the numeric code specified in REF02. 2. When REF01 is "PG" and REF04 C04001 is "SU" and REF02 and/or REF04 C04002 lack an appropriate code, this element contains an activity (throughput) description. This description must include the identification of both a product and a process.			
	REF04	**C040**	**Reference Identifier**		**O**	
			To identify one or more reference numbers or identification numbers as specified by the Reference Qualifier 1. When REF01 is "PG", this composite provides an process activity. 2. This composite must be applied in conjunction with REF01 code "PG" and an appropriate REF02 alpha-numeric code in order to identify an activity (throughput). 3. As the process is being identified in a composite, the component elements must be separated by a ":" rather than an "*" as they would be outside the composite. The composite must be expressed in a manner similar to the following example: *SU:APPLIED*			
>>	**C04001**	**128**	**Reference Identification Qualifier**		**M**	**ID 2/3**

Code qualifying the Reference Identification

1. This element indicates a process activity.

SU	Special Processing Code
	Unique code identifying the special handling requirements for the claim
	Indicates a process activity

>> **C04002** **127** **Reference Identification** **M** **AN 1/30**

Reference information as defined for a particular Transaction Set or as specified by the Reference Identification Qualifier

1. This element contains a code associated with C04001. Select one from the following list:

ADD	Added
APPL	Applied
AREA	Area
BAKE	Baked
BLOW	Blown
BURN	Burned
CAP	Capacity
CAST	Cast
CHAR	Charbroiled
CHRG	Charge(d)
CLND	Cleaned
COAT	Coated
CONS	Consumed
CRSH	Crushed
DGRS	Degreased
DRIL	Drilled
DRY	Dried
EMIT	Emitted
FEDD	Fed into Dryer
FEED	Feed
GIN	Ginned
GRAN	Granulated
HAND	Handled
IAD	In Adhesive Applied
ICT	In Coating
IINF	In Influent
IINK	In Ink
INOC	Inoculated
INPT	Input
IOPP	In Operation
LEAK	Leaked

LIQF	Liquified
LOAD	Loaded
MELT	Melted
MILL	Milled
MINE	Mined
MIX	Mixed
OPRG	Operating
PICK	Pickled
PLAT	Plated
PRDT	Product
PROC	Processed
PROD	Produced
PRODCAP	Production Capacity
PUMP	Pumped
RECD	Received
REDU	Reduced
REMD	Removed
ROAS	Roasted
SAW	Sawed
SHIP	Shipped
SHPRCD	Shipped or Received
SMOK	Smoked
SPUN	Spun
STOR	Storage
STRP	Stripped
TFRD	Transferred
THRU	Throughput
TPRT	Transported
TRAV	Traveled
TRTD	Treated
UNLD	Unloaded
USED	Used

Segment: **HL** **Hierarchical Level**
Position: 525
Loop: HL Mandatory
Level: Detail:
Usage: Mandatory
Max Use: 1
Purpose: To identify dependencies among and the content of hierarchically related groups of data segments
Syntax Notes:
Semantic Notes:
Comments:

1 The HL segment is used to identify levels of detail information using a hierarchical structure, such as relating line-item data to shipment data, and packaging data to line-item data.
The HL segment defines a top-down/left-right ordered structure.

2 HL01 shall contain a unique alphanumeric number for each occurrence of the HL segment in the transaction set. For example, HL01 could be used to indicate the number of occurrences of the HL segment, in which case the value of HL01 would be "1" for the initial HL segment and would be incremented by one in each subsequent HL segment within the transaction.

3 HL02 identifies the hierarchical ID number of the HL segment to which the current HL segment is subordinate.

4 HL03 indicates the context of the series of segments following the current HL segment up to the next occurrence of an HL segment in the transaction. For example, HL03 is used to indicate that subsequent segments in the HL loop form a logical grouping of data referring to shipment, order, or item-level information.

5 HL04 indicates whether or not there are subordinate (or child) HL segments related to the current HL segment.

Notes:

1. This level/loop (HLC) provides activity-level data, including:

- confidentiality indicator
- activity (throughput) information
- DARS quality rating score associated with activity (throughput)
- throughput method code
- activity (throughput) identification
- activity (throughput) schedule information
- seasonal activity (throughput) adjustment factor information
- meteorological data
- typical day information
- activity (throughput) schedule line item information

2. This loop must be applied one (1) time for each activity as specified in the LX loop (following segment).

3. The DTM segment (position 551) within the LX loop of this level (indicating activity (throughput) is the dominant date/time interval for all data located in subordinate segments and HL loops/levels. All data reported in elements subsequent to this position, must be associated with an appropriate DTM segment containing date/time data identical that reported in the DTM in the LX loop.

4. Loop (segments HL, SPI, LX, MEA, DTM, REF, CID, MEA, DTM, STA, DTM, REF) Example:

```
HL*30*20*C*1~
SPI*00~
LX*20~
MEA*TR**1000*TN:::YR:-1~
DTM*196*19970101~
DTM*197*19971231~
REF*PG*COAL**SU:BURN~
REF*D0*5~
REF*IX*02~
CID***EP*M~
MEA*EN*AD*25*FA~
DTM*196*19970101~
DTM*197*19971231~
CID***EP*A~
STA*ZZ*15*P1~
DTM*196*19970101~
DTM*197*19970331~
STA*ZZ*60*P1~
DTM*196*19970401~
DTM*197*19970630~
STA*ZZ*15*P1~
DTM*196*19970701~
DTM*197*19970930~
```

Data Element Summary

	Ref. Des.	Data Element	Name	Attr	ibutes
>>	**HL01**	**628**	**Hierarchical ID Number** A unique number assigned by the sender to identify a particular data segment in a hierarchical structure 1. This element contains a unique number used to identify the iteration of an HL loop.	**M**	**AN 1/12**
	HL02	**734**	**Hierarchical Parent ID Number** Identification number of the next higher hierarchical data segment that the data segment being described is subordinate to 1. This note pertains to POINT, AREA, and NONROAD SOURCE only. This element indicates that this level of the transaction set points to the HL loop parent containing the HL03 code "6" for process-level data. 2. This note pertains to MOBILE and BIOGENIC SOURCE only. This element indicates that this level of the transaction set points to the HL loop parent containing the HL03 code "5" for physical-level data.	**O**	**AN 1/12**
>>	**HL03**	**735**	**Hierarchical Level Code** Code defining the characteristic of a level in a hierarchical structure 1. This element indicates that this level of the transaction set contains activity-level data. C Date Indicates activity-level data	**M**	**ID 1/2**
	HL04	**736**	**Hierarchical Child Code** Code indicating if there are hierarchical child data segments subordinate to the level being described 1. This HL loop/level may not have any subordinate levels depending upon the application of the transaction set. 0 No Subordinate HL Segment in This Hierarchical Structure. 1 Additional Subordinate HL Data Segment in This Hierarchical Structure.	**O**	**ID 1/1**

Segment: **SPI** **Specification Identifier**
Position: 528
Loop: SPI Optional
Level: Detail:
Usage: Optional
Max Use: 1
Purpose: To provide a description of the included specification or technical data items
Syntax Notes: **1** If either SPI02 or SPI03 is present, then the other is required.
Semantic Notes:
Comments:
Notes:
1. This loop/segment does not apply with BIOGENIC SOURCE reporting.

2. This loop/segment provides the confidentiality indicator.

3. Loop/Segment Example:

SPI*00~
< information that is non-classified >

Data Element Summary

	Ref. Des.	Data Element	Name	Attr	ibutes
>>	**SPI01**	**786**	**Security Level Code** Code indicating the level of confidentiality assigned by the sender to the information following 1. This element contains the confidentiality indicator associated with the data in this loop/level. Select one from the following list: 00 Company Non-Classified 02 Company Confidential 90 Government Non-Classified 92 Government Confidential	**M**	**ID 2/2**

Segment: **N1** **Name**
Position: 552
Loop: N1 Optional
Level: Detail:
Usage: Optional
Max Use: 1
Purpose: To identify a party by type of organization, name, and code
Syntax Notes:
1 At least one of N102 or N103 is required.
2 If either N103 or N104 is present, then the other is required.
Semantic Notes:
Comments:
1 This segment, used alone, provides the most efficient method of providing organizational identification. To obtain this efficiency the "ID Code" (N104) must provide a key to the table maintained by the transaction processing party.
2 N105 and N106 further define the type of entity in N101.

Data Element Summary

	Ref. Des.	Data Element	Name		Attr	
ibutes						
>>	**N101**	**98**	**Entity Identifier Code** Code identifying an organizational entity, a physical location, property or an individual		**M**	**ID 2/3**
			JU	Jurisdiction		
				Secondary Jurisdiction		
	N102	**93**	**Name** Free-form name		**X**	**AN 1/60**

Segment: **N9** **Reference Identification**
Position: 567
Loop: N1 Optional
Level: Detail:
Usage: Optional
Max Use: >1
Purpose: To transmit identifying information as specified by the Reference Identification Qualifier
Syntax Notes:
1 At least one of N902 or N903 is required.
2 If N906 is present, then N905 is required.
3 If either C04003 or C04004 is present, then the other is required.
4 If either C04005 or C04006 is present, then the other is required.
Semantic Notes:
1 N906 reflects the time zone which the time reflects.
2 N907 contains data relating to the value cited in N902.
Comments:

Data Element Summary

	Ref. Des.	Data Element	Name	Attr	
ibutes					
>>	**N901**	**128**	**Reference Identification Qualifier** Code qualifying the Reference Identification 6J Census Tract Census Tract ID	**M**	**ID 2/3**
	N902	**127**	**Reference Identification** Reference information as defined for a particular Transaction Set or as specified by the Reference Identification Qualifier	**X**	**AN 1/30**
	N903	**369**	**Free-form Description** Free-form descriptive text	**X**	**AN 1/45**

Segment: **LX** **Assigned Number**
Position: 606
Loop: LX Optional
Level: Detail:
Usage: Optional
Max Use: 1
Purpose: To reference a line number in a transaction set
Syntax Notes:
Semantic Notes:
Comments:
Notes:

1. This loop/segment does not apply with BIOGENIC SOURCE reporting.

2. This loop provides the following information:

- activity (throughput) information
- DARS quality rating score associated with activity (throughput)
- throughput method code
- activity (throughput) identification

3. This segment is an X12 syntactical requirement only.

4. Loop (segments LX, MEA, DTM, REF) Example:

LX*20~
MEA*TR**1000*TN:::YR:-1~
DTM*196*19980101~
DTM*197*19981231~
REF*PG*COAL**SU:BURN~
REF*D0*5~
REF*IX*02~
< an activity (throughput) of 1000 tons of coal burned per year for the year starting January 1, 1998 and ending December 31, 1998; the reported activity (throughput) data has a DARS data quality score of 5 and was estimated based on expert judgment >

5. Segment Example:

LX*20~
< twentieth iteration of this LX loop within this transaction set >

Data Element Summary

	Ref. Des.	Data Element	Name	Attr ibutes	
>>	**LX01**	**554**	**Assigned Number** Number assigned for differentiation within a transaction set	**M**	**N0 1/6**

Segment: **MEA** **Measurements**
Position: 615
Loop: LX Optional
Level: Detail:
Usage: Mandatory
Max Use: >1
Purpose: To specify physical measurements or counts, including dimensions, tolerances, variances, and weights (See Figures Appendix for example of use of C001)
Syntax Notes:
1 At least one of MEA03 MEA05 MEA06 or MEA08 is required.
2 If MEA05 is present, then MEA04 is required.
3 If MEA06 is present, then MEA04 is required.
4 If MEA07 is present, then at least one of MEA03 MEA05 or MEA06 is required.
5 Only one of MEA08 or MEA03 may be present.
Semantic Notes:
1 MEA04 defines the unit of measure for MEA03, MEA05, and MEA06.
Comments:
1 When citing dimensional tolerances, any measurement requiring a sign (+ or -), or any measurement where a positive (+) value cannot be assumed, use MEA05 as the negative (-) value and MEA06 as the positive (+) value.
Notes:
1. This segment does not apply with BIOGENIC SOURCE reporting.

2. This segment provides individual activity (throughput) data associated with the activity (throughput) specified in the REF segment (following segment) code "PG".

3. This segment may only be applied one (1) time for each activity-level loop.

4. Segment Example:

MEA*TR**1000*TN:::YR:-1~
< an activity (throughput) of 1000 tons per year >

Data Element Summary

Ref. Des.	Data Element	Name	Attr ibutes
MEA01	**737**	**Measurement Reference ID Code** Code identifying the broad category to which a measurement applies 1. This element indicates individual activity (throughput) data associated with the activity (throughput) specified in the REF segment (following segment). TR Test Results Indicates that the data to follow are the results test measurements Indicates activity (throughput) data	**O ID 2/2**

	MEA03	**739**	**Measurement Value**	**X**	**R**	**1/20**
			The value of the measurement			
			1. This element contains the value associated with MEA01.			
	MEA04	**C001**	**Composite Unit of Measure**	**X**		
			To identify a composite unit of measure (See Figures Appendix for examples of use)			
			1. This composite provides the unit of measure associated with MEA03. 2. Units of measure that are complex expressions must be expressed in a manner similar to the following example: square kilometers per hour per second = *DK:2::HR:-1::03:-1*			
>>	**C00101**	**355**	**Unit or Basis for Measurement Code**	**M**	**ID**	**2/2**
			Code specifying the units in which a value is being expressed, or manner in which a measurement has been taken			
			1. This element contains the first unit in the complex unit of measure expression associated with MEA03. Select one from the following list:			

1A	Car Mile
	One freight car moving one mile
2I	British Thermal Units (BTUs) Per Hour
	British thermal units per hour
2L	Cubic Feet Per Minute
	Rate of flow
2U	Megagram
	Unit of mass
4I	Meters Per Second
	Measure of linear speed
4U	Pounds Per Hour
	Rate of flow
4W	Ton Per Hour
	Rate of flow
68	Ampere
86	Joules
AC	Acre
BA	Bale
BQ	Brake horse power
	The horsepower made available by an engine or turbine for driving machinery other then itself
BR	Barrel
BU	Bushel
	32 dry quarts
BZ	Million BTU's
CE	Centigrade, Celsius
CF	Cubic Feet

CH	Container
CM	Centimeter
CY	Cubic Yard
DA	Days
DH	Miles
DK	Kilometers
DR	Drum
EA	Each
F5	MOL
	Gram-molecular weight of a gas
FA	Fahrenheit
FC	1000 Cubic Feet
FM	Million Cubic Feet
FS	Feet Per Second
	Measure of linear speed
FT	Foot
GA	Gallon
GE	Pounds per Gallon
HJ	Horsepower
HM	Miles Per Hour
HQ	Hectare
HR	Hours
IE	Person
IN	Inch
K7	Kilowatt
	Measure of electrical power
KG	Kilogram
KK	100 Kilograms
LB	Pound
LT	Liter
MJ	Minutes
MM	Millimeter
MR	Meter
NX	Parts Per Thousand
P1	Percent
SB	Square Mile
SF	Square Foot
T6	Thousand Gallons
TH	Thousand
TM	Thousand Feet (Board)
TN	Net Ton (2,000 LB).

TQ	Thousand Feet		
TS	Thousand Square Feet		
TZ	Thousand Cubic Feet		
X5	Head		
	A measure used for a rounded, compact mass of leaves, buds or flowers		

C00102 1018 Exponent **O R 1/15**

Power to which a unit is raised

1. This element contains the exponent allowing the formulation of the complex expression that may be required as the unit of measure associated with MEA03.

2. When applying a complex expression (e.g., square kilometers per hour per second), apply the exponent of "-1" as per the example noted in MEA04.

C00103 649 Multiplier **O R 1/10**

Value to be used as a multiplier to obtain a new value

1. This element contains the multiplier allowing the formulation of the complex expression that may be required as the unit of measure associated with MEA03.

2. When applying a complex expression (e.g., square kilometers per hour per second), apply the multiplier of "n" as per the example noted in MEA04.

C00104 355 Unit or Basis for Measurement Code **O ID 2/2**

Code specifying the units in which a value is being expressed, or manner in which a measurement has been taken

1. This element contains the second unit in the complex unit of measure expression associated with MEA03. Select one from the following list:

HR	Hours
MR	Meter
YR	Years

C00105 1018 Exponent **O R 1/15**

Power to which a unit is raised

1. This element contains the exponent allowing the formulation of the complex expression that may be required as the unit of measure associated with MEA03.

2. When applying a complex expression (e.g., square kilometers per hour per second), apply the exponent of "-1" as per the example noted in MEA04.

C00107 355 Unit or Basis for Measurement Code **O ID 2/2**

Code specifying the units in which a value is being expressed, or manner in which a measurement has been taken

1. This element contains the third unit in the complex unit of measure expression associated with MEA03. Select one from the following list:

03	Seconds

C00108 1018 Exponent **O R 1/15**

Power to which a unit is raised

1. This element contains the exponent allowing the formulation of the complex expression that may be required as the unit of measure associated with MEA03.

2. When applying a complex expression (e.g., square kilometers per hour per second), apply the exponent of "-1" as per the example noted in MEA04.

Segment: **DTM** **Date/Time Reference**
Position: 624
Loop: LX Optional
Level: Detail:
Usage: Optional
Max Use: >1
Purpose: To specify pertinent dates and times
Syntax Notes: **1** At least one of DTM02 DTM03 or DTM05 is required.
2 If DTM04 is present, then DTM03 is required.
3 If either DTM05 or DTM06 is present, then the other is required.
Semantic Notes:
Comments:
Notes: 1. This segment does not apply with BIOGENIC SOURCE reporting.

2. This segment provides the beginning and end dates and times associated with the activity (throughput) specified in the REF segment (following segment) code "PG".

3. Segment Example:

DTM*196*19980101~
DTM*197*19981231~
< an activity (throughput) time period starting January 1, 1998 and ending December 31, 1998 >

Data Element Summary

	Ref. Des.	Data Element	Name	Attr	
ibutes					
>>	**DTM01**	**374**	**Date/Time Qualifier** Code specifying type of date or time, or both date and time 1. This element indicates the beginning and end dates and times associated with the activity (throughput) specified in the REF segment (following segment). Select one from the following list: 196 Start 197 End	**M**	**ID 3/3**
	DTM02	**373**	**Date** Date expressed as CCYYMMDD 1. This element contains the date value associated with the code specified in DTM01.	**X**	**DT 8/8**
	DTM03	**337**	**Time** Time expressed in 24-hour clock time as follows: HHMM, or HHMMSS, or HHMMSSD, or HHMMSSDD, where H = hours (00-23), M = minutes (00-59), S = integer seconds (00-59) and DD = decimal seconds; decimal seconds are expressed as follows: D = tenths (0-9) and DD = hundredths (00-99) 1. This element contains the time value associated with the code specified in DTM01.	**X**	**TM 4/8**

Segment: **REF** **Reference Identification**
Position: 627
Loop: LX Optional
Level: Detail:
Usage: Optional
Max Use: >1
Purpose: To specify identifying information
Syntax Notes: **1** At least one of REF02 or REF03 is required.
2 If either C04003 or C04004 is present, then the other is required.
3 If either C04005 or C04006 is present, then the other is required.
Semantic Notes: **1** REF04 contains data relating to the value cited in REF02.
Comments:
Notes: 1. This segment does not apply with BIOGENIC SOURCE reporting.

2. This segment provides the DARS quality rating score associated with the activity (throughput), throughput method code, and activity (throughput) identification (product and process identification).

3. REF01 code "PG" (i.e., product) and REF04 (i.e., process) must be applied in conjunction in order to identify an activity (throughput).

4. To report an activity (throughput), create the appropriate product/process terminology by selecting REF01 code "PG" and then selecting the appropriate product term from the REF02 code list. Then select REF04 C04001 code "SU" and select the appropriate process term from the REF04 C04002 code list. An example of an activity (throughput) that can be identified is coal burned, where coal is the product (REF02 code "COAL") and burned is the process (REF04 C04002 code "BURN"). If an appropriate product/process combination can not be created, enter the activity (throughput) in REF03 in the form of a text comment.

5. Segment Example:

REF*PG*COAL**SU:BURN~
REF*D0*5~
REF*IX*02~
< an activity (throughput) of coal burned with the associated data having a DARS data quality score of 5 and being estimated based on expert judgment >

Data Element Summary

	Ref. Des.	Data Element	Name	Attributes
>>	**REF01**	**128**	**Reference Identification Qualifier** Code qualifying the Reference Identification	**M ID 2/3**

1. The code "IX" apply with POINT SOURCE reporting only.

2. When code "PG" is applied, REF04 must also be applied in order to identify an activity (throughput).

3. This element indicates the type of information being reported with this iteration of the loop. Select one from the following list:

D0	Data Reliability Code
	Indicates a DARS quality rating score associated with the activity (throughput)
IX	Item Number
	Indicates a throughput method code 1. This code applies with POINT SOURCE reporting only.
PG	Product Group
	Indicates an activity product 1. When this code is applied, REF04 must also be applied.

REF02 127 Reference Identification X AN 1/30

Reference information as defined for a particular Transaction Set or as specified by the Reference Identification Qualifier

1. When REF01 is "D0", this element contains the appropriate value.

2. When REF01 is "IX", this element contains the appropriate method code value. Select one from the following numeric (01-17) list:

3. When REF01 is "PG" is applied, REF04 must be used in conjunction in order to identify an activity (throughput).

4. When REF01 is "PG, this element contains the appropriate product code value. Select one from the following alpha-numeric list:

01	Calculated based on physical principles
02	Estimated based on expert judgment
03	Calculated based on manufacturer-specified throughput capacity
04	Calculated based on direct continuous measurement of an activity surrogate
05	Calculated based on direct intermittent measurement of an activity
06	New construction, not yet operational. Emissions are zero.
07	Operations ceased. Emissions are zero.
08	Calculated based on modeling activity
09	Derived from Highway Performance Monitoring System (HPMS) data

10	Derived from census data
11	Derived from trade association/industry group data
12	State agency generated data
13	Local agency generated data
14	Federal agency generated data
15	Proprietary database
16	Based on survey results
17	Calculated based on statistical method
ABR	Abrasive
ABSP	ABS Polymer
ACEAL	Acetaldehyde
ACID	Acid
ACIDFN	Acid Final
ACIDPR	Acid Pure
ACRNL	Acrylonitrile
ACROL	Acrolein
ADH	Adhesive
ADN	ADN
ADPN	Adipronitrile
AGNT	Agent
ALLY	Alloy
ALMA	Alumina
ALMO	Aluminum Molten
AMM	Ammonia
ANILN	Aniline
ASB	Asbestos
ASP	Asphalt
ASPSL	Asphalt Shingle
BATT	Batteries
BAUX	Bauxite
BEAN	Beans
BEANGR	Beans Green
BEETRW	Beets Raw
BNZN	Benzene
BOD	Bodies
BORD	Board
BRED	Bread
BRIK	Brick
BUTDN	Butadiene
BUTDN13	1,3-Butadiene
CAD	Cadmium

CAN	Cans
CAPLM	Caprolactam
CAR	Car(s)
CARTOT	Cargo Total
CAST	Castings
CATL	Catalyst
CBLK	Carbon Black
CC14	CC14
CEM	Cement
CFC133	CFC-133
CHAR	Charcoal
CHRMORE	Chromite Ore
CHXN	Cyclohexene
CIG	Cigarettes
CL	Chlorine
CLAY	Clay
CLBNZ	Chlorobenzene(s)
CLFRM	Chloroform
CLMET	Chloromethane(s)
CLNK	Clinker
CLOT	Clothes
COAL	Coal
COALSTG	Coal Storage
COAT	Coating
COKE	Coke
COKEFR	Coke Free
COKERW	Coke Raw
CON	Concrete
COPLY	Copolymer
CORE	Cores
COREOL	Core Oil
COTT	Cotton
COW	Cattle
CTET	Carbon Tetrachloride
CU	Copper
CULL	Cullet
CUM	Cumene
CURR	Current
CUSC	Copper Scrap
DBZF	Dibenzofuran
DCB	1,4-Dichlorobenzene

DCE	1,2-Dichloroethane
DIST	Distance
DMF	DMF
DMTP	Dimethyl Terephthalate
DRAN	Drains
DRUM	Drums
EAFDT	EAF Dust
EDC	EDC
EDCVC	EDC-VC
ELEC	Electricity
ELECRD	Electrode
ENER	Energy
EPCH	Epichlorohydrin
ETCSOL	Etching Solution
ETH	Ethylene
ETHBNZ	Ethylbenzene
ETHBST	Ethylbenzene/Styrene
ETHCL	Ethyl Chloride
ETHDB	Ethylene Dibromide
ETHDC	Ethylene Dichloride
ETHOX	Ethylene Oxide
EXP	Exposed
EXTFC	Extractor Feed Cake
FABR	Fabric
FDNHCO	Feed NaHCO3 Dry
FEED	Feed
FEEDDR	Feed Dry
FEEDFR	Feed Fresh
FEEDMT	Feed Material
FELTST	Felt Saturated
FERT	Fertilizer
FIBR	Fiber
FISH	Fish
FISHML	Fish Meal
FISHRW	Fish Raw
FISHSC	Fish Scrap
FLC1112	Fluorocarbon 11/12
FLC22	Fluorocarbon 22
FLSP	Fluorspar
FORM	Formaldehyde
FORM37	37% Formaldehyde

FRMGS	Ferromanganese
FRSH	Fresh
FUEL	Fuel
GAS	Gas
GLSS	Glass
GLSSBD	Glass Beaded
GLYET	Glycol Ethers
GRAD	Graders
GRIT	Grit
GRN	Grain
GYPCR	Gypsum Crude
HAMB	Hamburger
HCL	Hydrochloric Acid
HEATIN	Heat Input
HXCBNZ	Hexachlorobenzene
HYC	Hydrocarbons Total
INK	Ink
IRON	Iron
LAB	LAB
LEAD	Lead
LEADOX	Lead Oxide
LIME	Lime
LIMHYD	Lime Hydrated
LIMSTN	Limestone
LOG	Logs
MATL	Material
MATLRW	Material Raw
MCBNZ	Monochlorobenzene
MEAL	Meal
MEAT	Meat
MERC	Mercury
METL	Metal
METLHT	Metal Hot
METLSPR	Metal Sprayed
MLCAHD	Meleic Anhydride
MTHCFRM	Methyl Chloroform
MTHCHL	Methylene Chloride
MTHCLFR	Methylene Chloride Fresh
NAPT	Naphthalene
NEOP	Neoprene
NICK	Nickel

NITELST	Nitrile Elastomer
NTRBZN	Nitrobenzene
OCRSL	0-Cresol
OIL	Oil
ORE	Ore
ORECON	Ore Concentrated
OVRBUR	Overburden
P205	P205
PAINT	Paint
PAPR	Paper
PCB	PCB
PCE	PCE
PCECC	PCE & CC14
PCETCE	PCE & TCE
PCETH	Perchloroethlyene
PCETHFR	Perchloroethylene Fresh
PCPHNL	Pentachlorophenol
PELLT	Pellets
PEST	Pesticide
PHNL	Phenol
PHSGN	Phosgene
PHSPH	Phosphate
PHSPHRK	Phosphate Rock
PHSPRS	Phosphorous
PIGIRN	Pig Iron
PIGMNT	Pigment
PILE	Pile
PIPE	Pipe
PIPECST	Pipe Cast
PLCANHD	Phthalic Anhydride
PLSTC	Plastic
PLYWD38	Plywood 3/8 inch
PM	PM
POLVNL	Polyvinyl
POLY	Polymer
POM	POM
PROD	Product
PRODDR	Product Dry
PRODFN	Product Finished
PRODSA	Product Surface Area
PRPLYN	Propylene

PULP	Pulp
PULPADB	Pulp Air-Dried Bleached
PULPADU	Pulp Air-Dried Unbleached
RAYN	Rayon
REF	Refinery
RESD	Residues/Skimmings
RESN	Resin
RESNPA	Resin Polyester/Alkyd
RESNTN	Resin Thinned
ROCK	Rock
SALT	Salt
SAND	Sand
SAWDST	Sawdust
SBR	SBR
SCMNGS	Silicomanganese
SCRP	Scrap
SCRPRS	Scrapers
SEAL	Seals
SHOT	Shot
SINT	Sinter
SLAG	Slag
SLBLKL	Solids Black Liquor
SLDG	Sludge
SLDGDR	Sludge Dried
SOLNCT	Solution Coating
SOLNFRM	Solution 37% Formaldehyde
SOLV	Solvent
SOLVCT	Solvent Coating
SOLVFR	Solvent Fresh
SOLVIN	Solvent in Ink
SOLVMU	Solvent Make-Up
SOLVRC	Solvent Reclaimed
SOLVTN	Solvent Thinned
SOUR	Sour Gas
STEL	Steel
STELSP	Steel Specialty
STM	Steam
STON	Stone
STOR	Storage
STRCH	Starch
STYR	Styrene

SULF	Sulfer 100%
SULFAC	Sulfuric Acid
SUMP	Sump
SURF	Surface
TCBZN	1,2,4-Trichlorobenzene
TCELN	Trichloroethylene
TCELNFR	Trichloroethylene Fresh
TCEN	1,1,1-Trichlorothane
TDI	TDI
TETHLD	Tetraethyl Lead
TIRE	Tires
TNT	TNT
TOLN	Toluene
TONE	Toner
TOPSL	Topsoil
TPLCAC	Terephthalic Acid Crude
TRCKHL	Trucks Haul
UREA	Urea
VAC	Vacuum
VEHCL	Vehicles Light/Medium
VNLC	Vinyl Chloride
VNLCM	Vinyl Chloride Monomer
VNLDC	Vinyldiene Chloride
WATCO	Water Cooling
WAX	Wax
WFR	Wafers/Chips
WFRBRD	Waferboard
WOOD	Wood
WOODDF	Wood Dry Flakes
WOODDR	Wood Dried
WSTE	Waste
WSTWTR	Wastewater
XLN	Xylene(s)
XLNM	m-Xylene
XLNO	o-Xylene
XLNT	Xylene(s) Total
ZINC	Zinc
ZINCOX	Zinc Oxide

REF03 352 Description X AN 1/80

A free-form description to clarify the related data elements and their content

1. When REF01 is "IX", this element contains a detailed description of the source, reference, or other applicable information associated with the numeric code specified in REF02.

2. When REF01 is "PG" and REF04 C04001 is "SU" and REF02 and/or REF04 C04002 lack an appropriate code, this element contains an activity (throughput) description. This description must include the identification of both a product and a process.

REF04 C040 Reference Identifier O

To identify one or more reference numbers or identification numbers as specified by the Reference Qualifier

1. When REF01 is "PG", this composite provides an activity process.

2. This composite must be applied in conjunction with REF01 code "PG" and an appropriate REF02 alpha-numeric code in order to identify an activity (throughput).

3. As the process is being identified in a composite, the component elements must be separated by a ":" rather than an "*" as they would be outside the composite. The composite must be expressed in a manner similar to the following example: *SU:APPLIED*

>> **C04001 128 Reference Identification Qualifier M ID 2/3**

Code qualifying the Reference Identification

1. This element indicates an activity process.

SU	Special Processing Code
	Unique code identifying the special handling requirements for the claim
	Indicates an activity process

>> **C04002 127 Reference Identification M AN 1/30**

Reference information as defined for a particular Transaction Set or as specified by the Reference Identification Qualifier

1. This element contains a code associated with C04001. Select one from the following list:

ADD	Added
APPL	Applied
AREA	Area
BAKE	Baked
BLOW	Blown
BURN	Burned
CAP	Capacity
CAST	Cast
CHAR	Charbroiled
CHRG	Charge(d)
CLND	Cleaned

COAT	Coated
CONS	Consumed
CRSH	Crushed
DGRS	Degreased
DRIL	Drilled
DRY	Dried
EMIT	Emitted
FEDD	Fed into Dryer
FEED	Feed
GIN	Ginned
GRAN	Granulated
HAND	Handled
IAD	In Adhesive Applied
ICT	In Coating
IINF	In Influent
IINK	In Ink
INOC	Inoculated
INPT	Input
IOPP	In Operation
LEAK	Leaked
LIQF	Liquified
LOAD	Loaded
MELT	Melted
MILL	Milled
MINE	Mined
MIX	Mixed
OPRG	Operating
PICK	Pickled
PLAT	Plated
PRDT	Product
PROC	Processed
PROD	Produced
PRODCAP	Production Capacity
PUMP	Pumped
RECD	Received
REDU	Reduced
REMD	Removed
ROAS	Roasted
SAW	Sawed
SHIP	Shipped
SHPRCD	Shipped or Received

SMOK	Smoked
SPUN	Spun
STOR	Storage
STRP	Stripped
TFRD	Transferred
THRU	Throughput
TPRT	Transported
TRAV	Traveled
TRTD	Treated
UNLD	Unloaded
USED	Used

Segment: **CID** **Characteristic/Class ID**
Position: 636
Loop: CID Optional
Level: Detail:
Usage: Optional
Max Use: 1
Purpose: To specify the general class or specific characteristic upon which test results are being reported or are to be taken
Syntax Notes:
1 At least one of CID01 CID02 CID04 or CID05 is required.
2 If either CID03 or CID04 is present, then the other is required.
3 If CID06 is present, then both CID03 and CID04 are required.
4 If CID07 is present, then at least one of CID04 or CID05 is required.
Semantic Notes:
Comments:
1 CID06 specifies the individual code list of the agency specified in CID03.
2 CID07 refers to whether or not the characteristic identified in CID04 or CID05 or both is affected by the product change. If it is affected, the value is "Y". A value of "N" is used when it is known that it will not be affected. Any other value indicates it is indeterminate.

Notes:

1. This loop provides the following information:

- activity (throughput) schedule information
- seasonal activity (throughput) adjustment factor information
- meteorological data
- typical day information
- activity (throughput) schedule line item information

2. This note pertains to POINT, AREA, MOBILE, and NONROAD ENGINE SOURCE only. This segment provides activity (throughput) schedule, seasonal activity (throughput) adjustment factor information, and meteorological information associated with the activity (throughput) specified in the REF segment (prior segment).

3. This note pertains to BIOGENIC SOURCE only. When CID04 is "W", this segment provides meteorological parameters associated with a biogenic activity.

4. Loop (segments CID, MEA, DTM, STA, DTM, REF) Example:

CID***EP*M~
MEA*NC*AD*25*FA~
DTM*196*19980101~
DTM*197*19981231~
CID***EP*A~
STA*ZZ*15*P1~
DTM*196*19980101~
DTM*197*19980331~
STA*ZZ*60*P1~
DTM*196*19980401~
DTM*197*19980630~
STA*ZZ*15*P1~
DTM*196*19980701~
DTM*197*19980930~
STA*ZZ*10*P1~
DTM*196*19981001~
DTM*197*19981231~
REF*72*06~
< a diurnal temperature change of 25 degrees Fahrenheit recorded for the time period starting January 1, 1998 and ending December 31, 1998; a seasonal activity (throughput) adjustment factor of 15 percent reported for the time period starting January 1, 1998 and ending March 31, 1998; a seasonal activity (throughput) adjustment factor of 60 percent reported for the time period starting April 1, 1998 and ending June 30, 1998; a seasonal activity (throughput) adjustment factor of 15 percent reported for the time period starting July 1, 1998 and ending September 30, 1998; a seasonal activity (throughput) adjustment factor of 10 percent reported for the time period starting October 1, 1998 and ending December 31, 1998; the adjustment factor time periods are associated with a modeling episode >

5. Segment Example:

Data Element Summary

Ref. Des.	Data Element	Name	Attr	
ibutes				
CID01	**738**	**Measurement Qualifier**	**X**	**ID 1/3**
		Code identifying a specific product or process characteristic to which a measurement applies		
CID03	**559**	**Agency Qualifier Code**	**X**	**ID 2/2**
		Code identifying the agency assigning the code values		
		1. This element identifies the agency maintaining the code values applied with this segment.		
		EP United States Environmental Protection Agency (EPA)		
CID04	**751**	**Product Description Code**	**X**	**AN 1/12**
		A code from an industry code list which provides specific data about a product characteristic		
		1. This element indicates the type of information being reported with this iteration of the loop. Select one from the following list:		
		A Seasonal Activity (Throughput) Adjustment Factor		
		M Meteorological		
		S Activity (Throughput) Schedule		

Segment: **MEA** **Measurements**
Position: 657
Loop: MEA Optional
Level: Detail:
Usage: Optional
Max Use: 1
Purpose: To specify physical measurements or counts, including dimensions, tolerances, variances, and weights (See Figures Appendix for example of use of C001)
Syntax Notes:
1 At least one of MEA03 MEA05 MEA06 or MEA08 is required.
2 If MEA05 is present, then MEA04 is required.
3 If MEA06 is present, then MEA04 is required.
4 If MEA07 is present, then at least one of MEA03 MEA05 or MEA06 is required.
5 Only one of MEA08 or MEA03 may be present.
Semantic Notes:
1 MEA04 defines the unit of measure for MEA03, MEA05, and MEA06.
Comments:
1 When citing dimensional tolerances, any measurement requiring a sign (+ or -), or any measurement where a positive (+) value cannot be assumed, use MEA05 as the negative (-) value and MEA06 as the positive (+) value.
Notes:
1. This loop provides meteorological data.

2. This segment provides meteorological data associated with CID04 (prior segment) code "W".

3. Loop (segments MEA, DTM) Example:

MEA*EN*AD*25*FA~
DTM*196*19980101~
DTM*197*19981231~
< a diurnal temperature change of 25 degrees Fahrenheit recorded for the time period starting January 1, 1998 and ending December 31, 1998

4. Segment Example:

MEA*EN*AD*25*FA~
< a diurnal temperature change of 25 degrees Fahrenheit >

Data Element Summary

Ref. Des.	Data Element	Name	Attributes
MEA01	**737**	**Measurement Reference ID Code** Code identifying the broad category to which a measurement applies	**O ID 2/2**

1. This element indicates the type of information being reported with this iteration of the loop. Select one from the following list:

EN	Environmental Conditions The data values to be reported reflect the environmental conditions surrounding a situation including but not limited to test environments

	MEA02	**738**	**Measurement Qualifier**	**O**	**ID 1/3**

Code identifying a specific product or process characteristic to which a measurement applies

1. This element indicated the meteorological parameter being reported with this iteration of the loop. Select one from the following list:

5	Cloud Cover
AD	Ambient Temperature Indicates diurnal temperature change
BR	Brightness Indicates visible radiation
R7	Speed Indicates wind speed
RA	Relative Humidity
TC	Temperature

	MEA03	**739**	**Measurement Value**	**X**	**R 1/20**

The value of the measurement

1. This element contains the value associated with the code specified in MEA02.

	MEA04	**C001**	**Composite Unit of Measure**	**X**

To identify a composite unit of measure (See Figures Appendix for examples of use)

1. This composite provides the units of measure associated with MEA03.

2. Units of measure that are complex expressions must be expressed in a manner similar to the following example: square miles per hour per meter per second = *HM:2::MR:-1::03:-1*

>>	**C00101**	**355**	**Unit or Basis for Measurement Code**	**M**	**ID 2/2**

Code specifying the units in which a value is being expressed, or manner in which a measurement has been taken

1. This element contains the first unit in the complex unit of measure expression associated with MEA03. Select one from the following list:

CE	Centigrade, Celsius
F5	MOL Gram-molecular weight of a gas
FA	Fahrenheit
HM	Miles Per Hour
P1	Percent

C00102	**1018**	**Exponent**	**O**	**R 1/15**

Power to which a unit is raised

1. This element contains the exponent allowing the formulation of the complex expression that may be required as the unit of measure associated with MEA03.

2. When applying a complex expression (e.g., square miles per hour per meter per second), apply the exponent of "-1" as per the example noted in MEA04.

C00104	**355**	**Unit or Basis for Measurement Code**	**O**	**ID 2/2**

Code specifying the units in which a value is being expressed, or manner in which a measurement has been taken

1. This element contains the second unit in the complex unit of measure expression associated with MEA03.

MR Meter

C00105	**1018**	**Exponent**	**O**	**R 1/15**

Power to which a unit is raised

1. This element contains the exponent allowing the formulation of the complex expression that may be required as the unit of measure associated with MEA03.

2. When applying a complex expression (e.g., square miles per hour per meter per second), apply the exponent of "-1" as per the example noted in MEA04.

C00107	**355**	**Unit or Basis for Measurement Code**	**O**	**ID 2/2**

Code specifying the units in which a value is being expressed, or manner in which a measurement has been taken

1. This element contains the second unit in the complex unit of measure expression associated with MEA03.

03 Seconds

C00108	**1018**	**Exponent**	**O**	**R 1/15**

Power to which a unit is raised

1. This element contains the exponent allowing the formulation of the complex expression that may be required as the unit of measure associated with MEA03.

2. When applying a complex expression (e.g., square miles per hour per meter per second), apply the exponent of "-1" as per the example noted in MEA04.

Segment: **DTM** **Date/Time Reference**
Position: 660
Loop: MEA Optional
Level: Detail:
Usage: Optional
Max Use: >1
Purpose: To specify pertinent dates and times
Syntax Notes: **1** At least one of DTM02 DTM03 or DTM05 is required.
2 If DTM04 is present, then DTM03 is required.
3 If either DTM05 or DTM06 is present, then the other is required.
Semantic Notes:
Comments:
Notes: 1. This segment provides the beginning and end dates and times associated with the meteorological parameter specified in the MEA segment (prior segment).

2. Segment Example:

DTM*196*19980101~
DTM*197*19981231~
< a meteorological time period starting January 1, 1998 and ending December 31, 1998 >

Data Element Summary

	Ref. Des.	Data Element	Name	Attr	
ibutes					
>>	**DTM01**	**374**	**Date/Time Qualifier** Code specifying type of date or time, or both date and time 1. This element indicates the beginning and end dates and times associated with the meteorological parameter specified in the MEA segment (prior segment). Select one from the following list: 196 Start 197 End	**M**	**ID 3/3**
	DTM02	**373**	**Date** Date expressed as CCYYMMDD 1. This element contains the date value associated with the code specified in DTM01.	**X**	**DT 8/8**
	DTM03	**337**	**Time** Time expressed in 24-hour clock time as follows: HHMM, or HHMMSS, or HHMMSSD, or HHMMSSDD, where H = hours (00-23), M = minutes (00-59), S = integer seconds (00-59) and DD = decimal seconds; decimal seconds are expressed as follows: D = tenths (0-9) and DD = hundredths (00-99) 1. This element contains the time value associated with the code specified in DTM01.	**X**	**TM 4/8**

Segment: **STA** **Statistics**
Position: 666
Loop: STA Optional
Level: Detail:
Usage: Optional
Max Use: 1
Purpose: To provide summary statistics related to a specific collection of test result values
Syntax Notes:
Semantic Notes:
Comments:

Notes:

1. This loop/segment does not apply with BIOGENIC SOURCE reporting.

2. This loop provides the following information:

- activity (throughput) schedule information
- seasonal activity (throughput) adjustment factor information
- typical day information
- activity (throughput) schedule line item information

3. This segment is used to provide activity (throughput) schedule or seasonal activity (throughput) adjustment factor information associated with CID04 (prior segment) codes "S" and "A" respectively.

4. Loop (segments STA, DTM, REF) Example:

STA*ZZ*15*P1~
DTM*196*19980101~
DTM*197*19980331~
STA*ZZ*60*P1~
DTM*196*19980401~
DTM*197*19980630~
STA*ZZ*15*P1~
DTM*196*19980701~
DTM*197*19980930~
STA*ZZ*10*P1~
DTM*196*19981001~
DTM*197*19981231~
REF*72*06~
< a seasonal activity (throughput) adjustment factor of 15 percent reported for the time period starting January 1, 1998 and ending March 31, 1998; a seasonal activity (throughput) adjustment factor of 60 percent reported for the time period starting April 1, 1998 and ending June 30, 1998; a seasonal activity (throughput) adjustment factor of 15 percent reported for the time period starting July 1, 1998 and ending September 30, 1998; a seasonal activity (throughput) adjustment factor of 10 percent reported for the time period starting October 1, 1998 and ending December 31, 1998; the adjustment factor time periods are associated with a modeling episode >

5. Segment Example:

STA*ZZ*15*P1~
< a seasonal activity (throughput) adjustment factor of 15 percent >

Data Element Summary

	Ref. Des.	Data Element	Name	Attr	ibutes
>>	**STA01**	**950**	**Statistic Code**	**M**	**ID 2/2**

A code specifying the specific statistic being reported

1. When code "ZZ" is applied in STA01, C00101 must be "P1".

2. This element indicates the type of measurement being reported with this iteration of the loop. Select one from the following list:

30	Average
ZZ	Mutually Defined

Indicates percent

1. When applying this code, C00101 must be "P1".

>> **STA02** **739** **Measurement Value** **M** **R** **1/20**

The value of the measurement

1. This element contains the value associated with the code ("A" or "S") specified in CID04 (prior segment).

STA03 **C001** **Composite Unit of Measure** **O**

To identify a composite unit of measure (See Figures Appendix for examples of use)

1. This composite provides the units of measure associated with STA02.

2. Units of measure that are complex expressions must be expressed in a manner similar to the following example: hours per week = *HR:::WK:-1*

>> **C00101** **355** **Unit or Basis for Measurement Code** **M** **ID** **2/2**

Code specifying the units in which a value is being expressed, or manner in which a measurement has been taken

1. This element contains the first unit in the complex unit of measure expression associated with STA02. Select one from the following list:

DA	Days
HR	Hours
P1	Percent
WK	Week

C00104 **355** **Unit or Basis for Measurement Code** **O** **ID** **2/2**

Code specifying the units in which a value is being expressed, or manner in which a measurement has been taken

1. This element contains the second unit in the complex unit of measure expression associated with STA021. Select one from the following list:

DA	Days
HR	Hours
YR	Years

C00105 **1018** **Exponent** **O** **R** **1/15**

Power to which a unit is raised

1. This element contains the exponent allowing the formulation of the complex expression that may be required as the unit of measure associated with STA02.

2. When applying a complex expression (e.g., hours per week), apply the exponent of "-1" as per the example noted in STA03.

Segment: **DTM** **Date/Time Reference**
Position: 669
Loop: STA Optional
Level: Detail:
Usage: Optional
Max Use: >1
Purpose: To specify pertinent dates and times
Syntax Notes: **1** At least one of DTM02 DTM03 or DTM05 is required.
2 If DTM04 is present, then DTM03 is required.
3 If either DTM05 or DTM06 is present, then the other is required.
Semantic Notes:
Comments:
Notes: 1. This segment does not apply with BIOGENIC SOURCE reporting.

2. This segment provides the typical day information and beginning and end dates for each applicable season/episode associated with the schedule or adjustment specified in CID04 (prior segment) codes "S" and "A" respectively.

3. Segment Example:

DTM*196*19980101~
DTM*197*19980331~
< an adjustment factor time period starting January 1, 1998 and ending March 31, 1998 >

Data Element Summary

	Ref. Des.	Data Element	Name	Attr	
ibutes					
>>	**DTM01**	**374**	**Date/Time Qualifier** Code specifying type of date or time, or both date and time 1. This element indicates the beginning and end dates for each applicable season/episode associated with the schedule or adjustment specified in CID04 (prior segment) codes "S" and "A" respectively. Select one from the following list: 196 Start 197 End 239 Baseline The baseline or original plan that progress is measured against Indicates typical day	**M**	**ID 3/3**
	DTM02	**373**	**Date** Date expressed as CCYYMMDD	**X**	**DT 8/8**

1. This element is only applied when DTM01 is "196" or "197".

2. This element contains the values associated with DTM01 code "196" or "197".

3. The format for reporting the applicable information is as follows (YY represents the year in which the month falls):

December------- CCYY1201
March ----------- CCYY0301
June ------------- CCYY0601
September ----- CCYY0901

DTM05 1250 Date Time Period Format Qualifier X ID 2/3

Code indicating the date format, time format, or date and time format

UN Unstructured

Used to indicate the value in DTM06 is the day of the week

DTM06 1251 Date Time Period X AN 1/35

Expression of a date, a time, or range of dates, times or dates and times

1. This element is only applied when DTM01 is "239".

2. This element contains the value associated with DTM01 code "239". Select the code corresponding to the typical day of the week being reported from the following list:

01
02
03
04
05
06
07

Segment: **REF** **Reference Identification**
Position: 672
Loop: STA Optional
Level: Detail:
Usage: Optional
Max Use: >1
Purpose: To specify identifying information
Syntax Notes: **1** At least one of REF02 or REF03 is required.
2 If either C04003 or C04004 is present, then the other is required.
3 If either C04005 or C04006 is present, then the other is required.
Semantic Notes: **1** REF04 contains data relating to the value cited in REF02.
Comments:
Notes: 1. This segment does not apply with BIOGENIC SOURCE reporting.

2. This segment provides an activity (throughput) schedule line item associated with the schedule specified in CID04 (prior segment) code "S".

3. Segment Example:

REF*72*06~
< adjustment factor time periods associated with a modeling episode >

Data Element Summary

	Ref. Des.	Data Element	Name	Attr	
ibutes					
>>	**REF01**	**128**	**Reference Identification Qualifier** Code qualifying the Reference Identification 1. This element indicates the activity (throughput) schedule line item. 72 Schedule Reference Number Identifies a number for a program schedule (for example, a logic type of network) or working schedule to complete a specific task or set of tasks Indicates activity (throughput) schedule line item	**M**	**ID 2/3**
	REF02	**127**	**Reference Identification** Reference information as defined for a particular Transaction Set or as specified by the Reference Identification Qualifier 1. This element indicates the activity (throughput) schedule line item being reported with this iteration of the loop. Select one from the following list: 01 Ozone Season 02 Peak Ozone Season 03 CO Season 04 Peak CO Season 05 Particulate Matter Season 06 Modeling Episode	**X**	**AN 1/30**

REF03	**352**	**Description**	**X**	**AN 1/80**

A free-form description to clarify the related data elements and their content

1. This element contains a description associated with the code specified in REF02.

Segment: **HL** **Hierarchical Level**
Position: 699
Loop: HL Mandatory
Level: Detail:
Usage: Mandatory
Max Use: 1
Purpose: To identify dependencies among and the content of hierarchically related groups of data segments
Syntax Notes:
Semantic Notes:
Comments:

1 The HL segment is used to identify levels of detail information using a hierarchical structure, such as relating line-item data to shipment data, and packaging data to line-item data.
The HL segment defines a top-down/left-right ordered structure.

2 HL01 shall contain a unique alphanumeric number for each occurrence of the HL segment in the transaction set. For example, HL01 could be used to indicate the number of occurrences of the HL segment, in which case the value of HL01 would be "1" for the initial HL segment and would be incremented by one in each subsequent HL segment within the transaction.

3 HL02 identifies the hierarchical ID number of the HL segment to which the current HL segment is subordinate.

4 HL03 indicates the context of the series of segments following the current HL segment up to the next occurrence of an HL segment in the transaction. For example, HL03 is used to indicate that subsequent segments in the HL loop form a logical grouping of data referring to shipment, order, or item-level information.

5 HL04 indicates whether or not there are subordinate (or child) HL segments related to the current HL segment.

Notes:

1. This level/loop (HL9) provides emission-level data, including:

- confidentiality indicator
- emission-specific Chemical Abstract Service (CAS)/pollutant code
- control strategy information
- rule effectiveness
- total capture/control efficiency
- rule penetration
- aggregate control efficiency method code
- rule effectiveness method code
- pollutant-specific estimated emissions
- pollutant-specific emission factors
- estimated emission method code
- emission factor method code
- DARS data quality score associated with estimated emission data

2. This loop must be applied one (1) time for each Chemical Abstract Service (CAS) number or pollutant code.

3. This note pertains to BIOGENIC SOURCE only. This loop provides estimated mission data only.

4. Loop (segments HL, SPI, MSG, PID, CID, TMD, MEA, REF, STA, REF) Example:

HL*40*20*9*0~
SPI*00*I9*CO~
CID***EP*ES~
TMD**EP*U~
STA*30*200*59~
REF*C3*02~
< information that is non-classified, associated with an uncontrolled carbon monoxide estimated emission of an average of 200 parts per million; the estimate was based on material balance using engineering knowledge of the process >

5. Segment Example:

HL*40*20*9*0~
< fortieth HL loop is subordinate to the twentieth HL loop of this transaction set. fortieth HL loop contains emission-level information and has no subordinate loops >

Data Element Summary

	Ref. Des.	Data Element	Name	Attr	ibutes
>>	**HL01**	**628**	**Hierarchical ID Number** A unique number assigned by the sender to identify a particular data segment in a hierarchical structure	**M**	**AN 1/12**

1. This element contains a unique number used to identify the iteration of an HL loop.

HL02 **734** **Hierarchical Parent ID Number** **O** **AN 1/12**

Identification number of the next higher hierarchical data segment that the data segment being described is subordinate to

1. This note pertains to POINT, AREA, NONROAD, and BIOGENIC SOURCE only. This element indicates that this level of the transaction set points to the HL loop parent containing the HL03 code "C" for activity-level data.

2. This note pertains to MOBILE SOURCE only. This element indicates that this level of the transaction set points to the HL loop parent containing the HL03 Code "6" for process-level data.

>> **HL03** **735** **Hierarchical Level Code** **M** **ID 1/2**

Code defining the characteristic of a level in a hierarchical structure

1. This element indicates that this level of the transaction set contains emission-level data.

9	Line Detail

Code identifying the supporting detail associated with the charge or group

Indicates emission-level data

HL04 **736** **Hierarchical Child Code** **O** **ID 1/1**

Code indicating if there are hierarchical child data segments subordinate to the level being described

0	No Subordinate HL Segment in This Hierarchical Structure.

Segment: **SPI** **Specification Identifier**
Position: 702
Loop: SPI Optional
Level: Detail:
Usage: Optional
Max Use: 1
Purpose: To provide a description of the included specification or technical data items
Syntax Notes: **1** If either SPI02 or SPI03 is present, then the other is required.
Semantic Notes:
Comments:
Notes: 1. This loop provides the following information:

- confidentiality indicator
- emission-specific Chemical Abstract Service (CAS)/pollutant code
- control strategy information

2. This segment provides the confidentiality indicator, Chemical Abstract Service (CAS) Number, and pollutant code.

3. This segment must be applied at least one (1) time to provide either SPI02 code "8D" or "I9" and the associated information.

4. Loop (segments SPI, MSG) Example:

SPI*00*I9*CO~
MSG*Annual reporting of the emission is required.~
< information that is non-classified, associated with carbon monoxide with respect to a control strategy requirement of annual reporting >

5. Segment Example:

SPI*00*I9*CO~
< information that is non-classified, associated with carbon monoxide >

Data Element Summary

	Ref. Des.	Data Element	Name	Attr ibutes
>>	**SPI01**	**786**	**Security Level Code** Code indicating the level of confidentiality assigned by the sender to the information following 1. This element contains the confidentiality indicator associated with the data in this loop/level. Select one from the following list: 00 Company Non-Classified 02 Company Confidential	**M ID 2/2**

		90 Government Non-Classified		
		92 Government Confidential		
SPI02	**128**	**Reference Identification Qualifier**	**X**	**ID 2/3**

Code qualifying the Reference Identification

1. This element must be applied at least one (1) time to provide either code "8D" or "I9".

2. This element indicates the type of pollutant-specific identifier being reported with this iteration of the loop. Select one from the following list:

8D	Chemical Abstract Service Number
I9	Pollutant

SPI03	**127**	**Reference Identification**	**X**	**AN 1/30**

Reference information as defined for a particular Transaction Set or as specified by the Reference Identification Qualifier

1. When SPI02 is "8D", this element contains a Chemical Abstract Service (CAS) number.

2. When SPI02 is "I9", this element contains a pollutant code. Select one from the following list:

CO	Carbon monoxide
HC	Hydrocarbons
ISO	Isoprene
MONO	Monoterpines
NMHC	Nonmethane hydrocarbons
NMOC	Nonmethane organic compounds
NMOG	Nonmethane organic gases
NO	Nitric oxide
NOX	Nitrogen oxides
NOY	Nitrogen oxides plus secondary compounds
OVOC	Other volatile organic compounds
PB	Lead
PM	Particulate matter
PM10	Particulate matter >= 10
PM25	Particulate matter >= 2.5
ROG	Reactive organic gases
SOX	Sulfur oxides
TOG	Total organic gases
VOC	Volatile organic compounds

Segment: **MSG** **Message Text**
Position: 723
Loop: SPI Optional
Level: Detail:
Usage: Optional
Max Use: >1
Purpose: To provide a free-form format that allows the transmission of text information
Syntax Notes: **1** If MSG03 is present, then MSG02 is required.
Semantic Notes: **1** MSG03 is the number of lines to advance before printing.
Comments: **1** MSG02 is not related to the specific characteristics of a printer, but identifies top of page, advance a line, etc.
2 If MSG02 is "AA - Advance the specified number of lines before print" then MSG03 is required.
Notes: 1. This segment does not apply with BIOGENIC SOURCE reporting.

2. This segment contains the control strategy description (e.g., rule/regulation name, permit requirements, etc.) associated with the pollutant specified in SPI03 (prior segment).

3. Segment Example:

MSG*Annual reporting of the emission is required.~
< a control strategy requirement of annual reporting >

Data Element Summary

	Ref. Des.	Data Element	Name	Attr	ibutes
>>	**MSG01**	**933**	**Free-Form Message Text** Free-form message text	**M**	**AN 1/264**

Segment: **PID** **Product/Item Description**
Position: 744
Loop: PID Optional
Level: Detail:
Usage: Optional
Max Use: 1
Purpose: To describe a product or process in coded or free-form format
Syntax Notes:
1 If PID04 is present, then PID03 is required.
2 At least one of PID04 or PID05 is required.
3 If PID07 is present, then PID03 is required.
4 If PID08 is present, then PID04 is required.
5 If PID09 is present, then PID05 is required.

Semantic Notes:
1 Use PID03 to indicate the organization that publishes the code list being referred to.
2 PID04 should be used for industry-specific product description codes.
3 PID08 describes the physical characteristics of the product identified in PID04. A "Y" indicates that the specified attribute applies to this item; an "N" indicates it does not apply. Any other value is indeterminate.
4 PID09 is used to identify the language being used in PID05.

Comments:
1 If PID01 equals "F", then PID05 is used. If PID01 equals "S", then PID04 is used. If PID01 equals "X", then both PID04 and PID05 are used.
2 Use PID06 when necessary to refer to the product surface or layer being described in the segment.
3 PID07 specifies the individual code list of the agency specified in PID03.

Notes:
1. This loop/segment does not apply with BIOGENIC SOURCE reporting.

2. This loop/segment provides the level to which the control strategy specified in MSG01(prior segment) applies.

3. Loop/Segment Example:

PID*S**EP*04~
< information referring to control strategies that is reported from a structured code list maintained by the EPA, which in this instance indicates that the strategy applies at the site/source-level >

Data Element Summary

	Ref. Des.	Data Element	Name	Attr ibutes	
>>	**PID01**	**349**	**Item Description Type** Code indicating the format of a description	**M**	**ID 1/1**

1. This element indicates the format in which the information in this segment is being presented.

S	Structured (From Industry Code List)

PID03 **559** **Agency Qualifier Code** **X** **ID 2/2**

Code identifying the agency assigning the code values

1. This element identifies the agency maintaining the code values applied with this segment.

EP	United States Environmental Protection Agency (EPA)

PID04 **751** **Product Description Code** **X** **AN 1/12**

A code from an industry code list which provides specific data about a product characteristic

1. This element indicates which level is being reported with this iteration of the loop. Select one from the following list:

04	Site/Source
05	Physical
06	Process

PID08 **1073** **Yes/No Condition or Response Code** **O** **ID 1/1**

Code indicating a Yes or No condition or response

1. This segment does not apply with BIOGENIC SOURCE reporting.

2. This element indicates whether the control strategy indicated in MSG01 (prior segment) applies to the level specified PID04. Select one from the following list:

N	No
Y	Yes

Segment: **CID** **Characteristic/Class ID**
Position: 810
Loop: CID Optional
Level: Detail:
Usage: Optional
Max Use: 1
Purpose: To specify the general class or specific characteristic upon which test results are being reported or are to be taken
Syntax Notes:
1 At least one of CID01 CID02 CID04 or CID05 is required.
2 If either CID03 or CID04 is present, then the other is required.
3 If CID06 is present, then both CID03 and CID04 are required.
4 If CID07 is present, then at least one of CID04 or CID05 is required.
Semantic Notes:
Comments:
1 CID06 specifies the individual code list of the agency specified in CID03.
2 CID07 refers to whether or not the characteristic identified in CID04 or CID05 or both is affected by the product change. If it is affected, the value is "Y". A value of "N" is used when it is known that it will not be affected. Any other value indicates it is indeterminate.

Notes:

1. This loop provides the following information:

- pollutant-specific aggregate control information
- pollutant-specific mass emissions information
- pollutant-specific emission factors information

2. This segment provides pollutant-specific aggregate control information, pollutant-specific mass emissions, and pollutant-specific emission factors data associated with the pollutant specified in SPI03 (prior segment).

3. This note pertains to BIOGENIC SOURCE only. Only CID04 code "ES" may be applied.

4. This note pertains to BIOGENIC SOURCE only. When CID04 is "ES", this segment provides pollutant-specific estimated emissions.

5. Loop (segments CID, TMD, MEA, REF, STA, REF) Example:

CID***EP*ES~
TMD**EP*U~
STA*30*200*59~
REF*C3*02~
< estimated emission from an uncontrolled pollutant at an average of 200 parts per million; the estimate was based on material balance using engineering knowledge of the process >

6. Segment Example:

CID***EP*ES~
< estimated emission selected from a list maintained by the EPA >

Data Element Summary

Ref. Des.	Data Element	Name	Attr	
ibutes				
CID03	**559**	**Agency Qualifier Code** Code identifying the agency assigning the code values 1. This element identifies the agency maintaining the code values applied with this segment. EP United States Environmental Protection Agency (EPA)	**X**	**ID 2/2**
CID04	**751**	**Product Description Code** A code from an industry code list which provides specific data about a product characteristic	**X**	**AN 1/12**

1. This note pertains to BIOGENIC SOURCE only. Only code "ES" may be applied.

2. This element indicates the information being reported with this iteration of the loop. Select one from the following list:

CE	Aggregate Control Information
EF	Emission Factor
ES	Estimated Emissions

Segment: **TMD** **Test Method**
Position: 816
Loop: CID Optional
Level: Detail:
Usage: Optional
Max Use: >1
Purpose: To describe the nature of the test performed
Syntax Notes:
1 If either TMD02 or TMD03 is present, then the other is required.
2 If TMD09 is present, then TMD02 is required.
Semantic Notes:
1 TMD07 is the date of the test method as assigned by the issuing organization.
2 TMD08 is the document revision number.
Comments:
1 TMD09 specifies the individual code list of the agency specified in TMD02.
Notes:
1. This segment does not apply with BIOGENIC SOURCE reporting.

2. This segment indicates whether the emission factor or estimated emission associated with STA02 (following segment) is reported on a controlled or uncontrolled basis.

3. Segment Example:

TMD**EP*U~
< an uncontrolled pollutant selected from a list maintained by the EPA >

Data Element Summary

Ref. Des.	Data Element	Name	Attr	ibutes
TMD02	**559**	**Agency Qualifier Code** Code identifying the agency assigning the code values 1. This element identifies the agency maintaining the code values applied with this segment. EP United States Environmental Protection Agency (EPA)	**X**	**ID 2/2**
TMD03	**751**	**Product Description Code** A code from an industry code list which provides specific data about a product characteristic 1. This element indicates whether the emission factor or estimated emission associated with STA02 (following segment) is reported on a controlled or uncontrolled basis. Select one from the following list: C Controlled U Uncontrolled	**X**	**AN 1/12**

Segment: **MEA** **Measurements**
Position: 831
Loop: MEA Optional
Level: Detail:
Usage: Optional
Max Use: 1
Purpose: To specify physical measurements or counts, including dimensions, tolerances, variances, and weights (See Figures Appendix for example of use of C001)

Syntax Notes:
1 At least one of MEA03 MEA05 MEA06 or MEA08 is required.
2 If MEA05 is present, then MEA04 is required.
3 If MEA06 is present, then MEA04 is required.
4 If MEA07 is present, then at least one of MEA03 MEA05 or MEA06 is required.
5 Only one of MEA08 or MEA03 may be present.

Semantic Notes:
1 MEA04 defines the unit of measure for MEA03, MEA05, and MEA06.

Comments:
1 When citing dimensional tolerances, any measurement requiring a sign (+ or -), or any measurement where a positive (+) value cannot be assumed, use MEA05 as the negative (-) value and MEA06 as the positive (+) value.

Notes:
1. This loop/segment does not apply with BIOGENIC SOURCE reporting.

2. This segment only applies when CID04 (prior segment) is "CE".

3. This loop provides the following information:

- rule effectiveness
- total capture/control efficiency
- rule penetration
- aggregate control efficiency method code
- rule effectiveness method code

4. When CID04 (prior segment) is "CE", this segment provides rule effectiveness, total capture/control efficiency, rule penetration.

5. Loop (segments MEA, REF) Example:

MEA*AH**82*P1***31~
REF*C3*06~
< total capture/control efficiency of 82 percent based on a calculation arrived at through the performance of a pilot bench study >

6. Segment Example:

MEA*AH**82*P1***31~
< total capture/control efficiency of 82 percent based on a calculation >

Data Element Summary

	Ref. Des.	Data Element	Name	Attr	
ibutes					
	MEA01	**737**	**Measurement Reference ID Code**	**O**	**ID 2/2**
			Code identifying the broad category to which a measurement applies		
			1. This element indicates the type of aggregate control information is being reported with this iteration of the loop. Select one from the following list:		
			AG Compliance Total		
			Indicates the level of rule effectiveness		
			AH Gross Compliance Total		
			Indicates the level of total capture/control efficiency		
			PM Permitted		
			The condition or activity approved by the appropriate regulatory agency		
			Indicates the level of rule penetration		
	MEA03	**739**	**Measurement Value**	**X**	**R 1/20**
			The value of the measurement		
			1. This element contains the value associated with the code specified in MEA01.		
	MEA04	**C001**	**Composite Unit of Measure**	**X**	
			To identify a composite unit of measure (See Figures Appendix for examples of use)		
			1. This composite provides the unit of measure associated with MEA03.		
>>	**C00101**	**355**	**Unit or Basis for Measurement Code**	**M**	**ID 2/2**
			Code specifying the units in which a value is being expressed, or manner in which a measurement has been taken		
			1. This element contains the unit of measure associated with MEA03.		
			P1 Percent		
	MEA07	**935**	**Measurement Significance Code**	**O**	**ID 2/2**
			Code used to benchmark, qualify or further define a measurement value		
			1. This element indicates the type of measurement being reported with this iteration of the loop. Select one from the following list:		
			22 Actual		
			23 Predicted		
			31 Calculated		

Segment: **REF** **Reference Identification**
Position: 837
Loop: MEA Optional
Level: Detail:
Usage: Optional
Max Use: >1
Purpose: To specify identifying information
Syntax Notes: **1** At least one of REF02 or REF03 is required.
2 If either C04003 or C04004 is present, then the other is required.
3 If either C04005 or C04006 is present, then the other is required.
Semantic Notes: **1** REF04 contains data relating to the value cited in REF02.
Comments:
Notes: 1. This segment does not apply with BIOGENIC SOURCE reporting.

2. This segment only applies when CID04 (prior segment) is "CE".

3. When MEA01 (prior segment) is "AG" or "AH", this segment provides method codes for rule effectiveness or aggregate capture/control efficiency, respectively.

4. Segment Example:

REF*C3*06~
< calculation based on a pilot bench study >

Data Element Summary

	Ref. Des.	Data Element	Name	Attr	
ibutes					
>>	**REF01**	**128**	**Reference Identification Qualifier**	**M**	**ID 2/3**

Code qualifying the Reference Identification

1. REF01 code "C3" is only applied when MEA01 (prior segment) is "AH".

2. REF01 code "ZZ" is only applied when MEA01 (prior segment) is "AG".

3. This element indicates the type of aggregate control information being reported with this iteration of the loop. Select one from the following list:

C3 Customer specification number

Indicates aggregated control information calculation method

1. When applying this code, MEA01 must be "AH".

ZZ Mutually Defined

Indicates a regulation identifier for rule effectiveness

1. When applying this code, MEA01 must be "AG".

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Reference information as defined for a particular Transaction Set or as specified by the Reference Identification Qualifier

1. When REF01 is "C3", this element contains an appropriate method code associated with MEA01 (prior segment) code "AH". Select one from the following numeric list:

2. When REF01 is "C3", this element contains an appropriate method code associated with MEA01 (prior segment) code "AG". Select one from the following alphabetic list:

01	Calculated based on source test or other emission measurement
02	Calculated based on material balance using engineering knowledge of the process
03	Calculated based on best guess/engineering judgment
04	Calculated based on vendor emission factor specification
05	Calculated based on ratio in order to measure pollutant
06	Calculated based on pilot bench study
07	State Stack Test
08	State Material Balance
09	State Efficiency of Control Device
10	Company Material Balance
11	Company Efficiency of Control Device
12	Continuous Emission Monitoring
A	Area Source Questionnaire
C	Direct calc. of emissions by solvent use, all solvents emitted in time period
D	80% - Default value
E	Source in compliance due to irreversible process that eliminates solvent use
H	90% - Default- enhance monitoring
L	Local category-specific rule effectiveness factor - not EPA regulated
M	Continuous emission factor
N	Source not subject to regulation
P	Point Source Questionnaire
S	EPA Single Source Category Determination Protocol Study
U	Uncontrolled emission

Segment: **STA** **Statistics**
Position: 840
Loop: STA Optional
Level: Detail:
Usage: Optional
Max Use: 1
Purpose: To provide summary statistics related to a specific collection of test result values
Syntax Notes:
Semantic Notes:
Comments:
Notes:

1. This segment only applies when CID04 (prior segment) is "EF" or "ES".

2. This loop provides the following information:

- pollutant-specific estimated emissions
- pollutant-specific emission factors
- estimated emission method code
- emission factor method code
- DARS data quality score associated with estimated emission data

3. When CID04 (prior segment) is "EF" or "ES", this segment provides emission factor or estimated emissions, respectively.

4. This note pertains to BIOGENIC SOURCE only. This segment is only used to report information associated with CID04 (prior segment) code "ES".

5. Loop (segments STA, REF) Example:

STA*30*200*59~
REF*C3*02~
< an average of 200 parts per million with the quantity arrived at by an estimate based on material balance using engineering knowledge of the process >

6. Segment Example:

STA*30*200*59~
< an average of 200 parts per million >

Data Element Summary

	Ref. Des.	Data Element	Name	Attr	
ibutes					
>>	**STA01**	**950**	**Statistic Code** A code specifying the specific statistic being reported 1. This element indicates the type of measurement being reported with this iteration of the loop. Select one from the following list:	**M**	**ID 2/2**

			15	Maximum Average	
				Indicates the provision of an actual value	
			16	Process Capability Upper	
				Indicates the provision of a potential value	
			30	Average	
>>	**STA02**	**739**	**Measurement Value**	**M**	**R 1/20**
			The value of the measurement		
			1. This element contains the value associated with the emission specified in SPI03.		
	STA03	**C001**	**Composite Unit of Measure**	**O**	
			To identify a composite unit of measure (See Figures Appendix for examples of use)		
			1. This composite is only applied when CID04 (prior segment) code is "ES". 2. When CID04 (prior segment) is "ES", this composite provides the unit of measure associated with STA02. 3. Units of measure that are complex expressions must be expressed in a manner similar to the following example: kilogram per day = *KG:::DA:-1* 4. This note pertains to POINT, AREA, MOBILE, and NONROAD ENGINE SOURCE only. Unit of measure associated with emission factor (CID04 code is "EF") are not reported with this transaction set. These units will be derived from the units associated with estimated emission (STA03) and activity (throughput) (MEA04 from HL loop "C").		
>>	**C00101**	**355**	**Unit or Basis for Measurement Code**	**M**	**ID 2/2**
			Code specifying the units in which a value is being expressed, or manner in which a measurement has been taken		
			1. This element is only applied when CID04 (prior segment) code is "ES". 2. When CID04 (prior segment) is "ES", this element contains the first unit in the complex unit of measure expression associated with STA02. Select one from the following list:		
			2U	Megagram	
				Unit of mass	
			59	Parts Per Million	
			61	Parts Per Billion	
			CO	Cubic Meters (Net)	
			F5	MOL	
				Gram-molecular weight of a gas	
			GR	Gram	
			KG	Kilogram	
			LB	Pound	
			M5	Microcurie	
			MP	Metric Ton	

		P1	Percent		
		TN	Net Ton (2,000 LB).		
C00104	**355**	**Unit or Basis for Measurement Code**		**O**	**ID 2/2**
		Code specifying the units in which a value is being expressed, or manner in which a measurement has been taken			
		1. This element is only applied when CID04 (prior segment) code is "ES". 2. When CID04 (prior segment) is "ES", this element contains the second unit in the complex unit of measure expression associated with STA02. Select one from the following list:			
		DA	Days		
		DK	Kilometers		
		YR	Years		
C00105	**1018**	**Exponent**		**O**	**R 1/15**
		Power to which a unit is raised			
		1. This element is only applied when CID04 (prior segment) code is "ES". 2. This element contains the exponent allowing the formulation of the complex expression that is required as the unit of measure associated with STA02. 3. When applying a complex expression (e.g., kilograms per day), apply the exponent of "-1" as per the example noted in STA03.			
C00111	**1018**	**Exponent**		**O**	**R 1/15**
		Power to which a unit is raised			
C00112	**649**	**Multiplier**		**O**	**R 1/10**
		Value to be used as a multiplier to obtain a new value			
STA07	**741**	**Range Maximum**		**O**	**R 1/20**
		The value specifying the maximum of the measurement range			
STA08	**935**	**Measurement Significance Code**		**O**	**ID 2/2**
		Code used to benchmark, qualify or further define a measurement value			
		31	Calculated		
			Indicates allowable		
		71	Low		
			Indicates hourly		
		76	Medium		
			Indicates daily		
		85	High		
			Indicates annual		

Segment: **REF** **Reference Identification**
Position: 846
Loop: STA Optional
Level: Detail:
Usage: Optional
Max Use: >1
Purpose: To specify identifying information
Syntax Notes: **1** At least one of REF02 or REF03 is required.
2 If either C04003 or C04004 is present, then the other is required.
3 If either C04005 or C04006 is present, then the other is required.
Semantic Notes: **1** REF04 contains data relating to the value cited in REF02.
Comments:
Notes: 1. This segment does not apply with BIOGENIC SOURCE reporting.

2. This segment only applies when CID04 (prior segment) is "EF" or "ES".

3. This segment provides estimated emission method codes, emission factor method codes, and DARS quality rating score associated with STA02 (prior segment).

4. Segment Example:

REF*C3*02~
< estimate based on material balance using engineering knowledge of the process >

Data Element Summary

	Ref. Des.	Data Element	Name	Attr	
ibutes					
>>	**REF01**	**128**	**Reference Identification Qualifier** Code qualifying the Reference Identification 1. This element indicates the type of information being reported in this iteration of the loop. Select one from the following list: C3 Customer specification number Indicates the estimated emission method code or emission factor method code D0 Data Reliability Code Indicates the DARS data quality rating score	**M**	**ID 2/3**
	REF02	**127**	**Reference Identification** Reference information as defined for a particular Transaction Set or as specified by the Reference Identification Qualifier	**X**	**AN 1/30**

1. When REF01 is "C3", this element contains the applicable method code associated with the code ("EF" or "ES") specified in CID04 (prior segment). Select one from the following numeric list:

2. When REF01 is "D0", this element contains the appropriate DARS data quality score associated with the code ("EF" or "ES") specified in CID04 (prior segment). If a DARS data quality score is not provided select one of the AIRS ratings from the following alphabetic list:

01	Calculated based on source test or other emission measurement
02	Calculated based on material balance using engineering knowledge of the process
03	Calculated based on best guess/engineering judgment
04	Calculated based on vendor emission factor specification
05	Calculated based on ratio in order to measure pollutant
06	Calculated based on pilot bench study
07	State Stack Test
08	State Material Balance
09	State Efficiency of Control Device
10	Company Material Balance
11	Company Efficiency of Control Device
12	Continuous Emission Monitoring
13	Calculated based on AP-42 emission factor
14	Calculated based on state/local agency emission factor
15	New construction, not yet operational - emissions are zero
16	Operations ceased- emissions are zero
17	Calculated based on FIRE emission factor
18	Calculated based on user-supplied emission factor
19	Calculated based on EPA speciation factor
20	Calculated based on state/local agency speciation factor
21	Calculated based on trade association emission factor
22	CO Stack Test Approved by State
23	Other CO Stack Test Approved by State
24	State Factor Used by State
25	State VOC Calculation
26	Company SCC Factor
27	Company VOC Calculation
28	Other miscellaneous emission method code
A	AIRS Rating A
B	AIRS Rating B
C	AIRS Rating C
D	AIRS Rating D

E	AIRS Rating E
F	AIRS Rating F

Segment: **SE** **Transaction Set Trailer**
Position: 010
Loop:
Level: Summary:
Usage: Mandatory
Max Use: 1
Purpose: To indicate the end of the transaction set and provide the count of the transmitted segments (including the beginning (ST) and ending (SE) segments)
Syntax Notes:
Semantic Notes:
Comments: **1** SE is the last segment of each transaction set.
Notes: 1. This segment is an X12 transaction set requirement only.

2. Segment Example:

SE*154*0001~
< provide for 154 total segments within transaction set 0001 >

Data Element Summary

	Ref. Des.	Data Element	Name	Attr	ibutes
>>	**SE01**	**96**	**Number of Included Segments** Total number of segments included in a transaction set including ST and SE segments	**M**	**N0 1/10**
>>	**SE02**	**329**	**Transaction Set Control Number** Identifying control number that must be unique within the transaction set functional group assigned by the originator for a transaction set	**M**	**AN 4/9**